

TELEPATHY



Digitized by the Internet Archive
in 2017 with funding from
Wellcome Library

<https://archive.org/details/b29814376>

TELEPATHY

*An Outline of its Facts, Theory,
and Implications*

BY

WHATELY CARINGTON

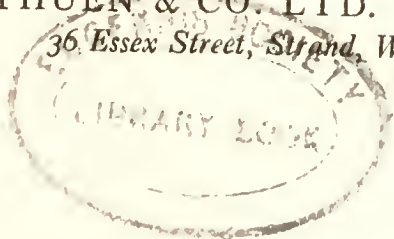
MEMBER OF COUNCIL OF THE SOCIETY FOR
PSYCHICAL RESEARCH SINCE 1920

SECOND EDITION



METHUEN & CO. LTD. LONDON

36 Essex Street, Strand, W.C.2

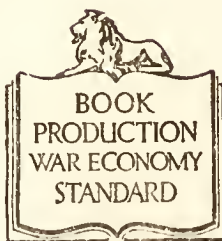


TO MY WIFE
HEDDA
IN GRATEFUL APPRECIATION OF
ALL THAT SHE HAS DONE TO
MAKE THE WRITING OF THIS
BOOK POSSIBLE

First published . . . *February 15th 1945*
Second edition . . . *1945*

17495730

WELLCOME INSTITUTE LIBRARY	
Coll	we' MOmec
Call	
No	WM



THIS BOOK IS PRODUCED IN
COMPLETE CONFORMITY WITH THE
AUTHORIZED ECONOMY STANDARDS

PRINTED IN GREAT BRITAIN

CONTENTS

PART I: FACTS

INTRODUCTION

PAGE

vii

CHAPTER

I. SPONTANEOUS CASES

I

1. *The Earliest Recorded Experiment.* 2. *The Society for Psychical Research.* 3. *Spontaneous Cases.* 4. *Coincidence.* 5. *Cumulative Evidence.* 6. *Value of Spontaneous Cases.* 7. *Value of Spontaneous Cases, continued.* 8. *More Cases Needed*

II. EXPERIMENTAL WORK: INTRODUCTORY: SOME EARLY EXPERIMENTS

8

9. *Experiments in General.* 10. *Significance and Chance.* 11. *Cards and Drawings.* 12. *Early Experiments, General.* 13. *Usher and Burt.* 14. *Coover.* 15. *Troland.* 16. *Groningen.* 17. *Estabrooks.* 18. *Jephson.* 19. *Short Discussion of Early Experiments*

III. EXPERIMENTAL WORK (continued): RECENT RESEARCHES

20

20. *The Work of Dr. J. B. Rhine.* 21. *The Work of Mr. G. N. M. Tyrrell.* 22. *The Work of Dr. Hettinger.* 23. *The Writer's Experiments with Drawings: (1) General.* 24. *The same, continued: (2) Assessment, The Matching Method.* 25. *The same, continued: (3) Displacement and Precognition.* 26. *The same, continued: (4) Stevens's Method.* 27. *The same, continued: (5) Three Technical Points.* 28. *The same, continued: (6) Catalogue and Fisher Scores.* 29. *The same, continued: (7) Various Conclusions.* 30. *The Work of Mr. S. G. Soal.* 31. *Experimental Work: Concluding Remarks*

IV. OBJECTIONS AND RESISTANCES

41

32. *Resistances in General.* 33. *Alleged 'Intrinsic Improbability'.* 34. *Physical Impossibility.* 35. *Scientific Apprehensions*

PART II: THEORY

V. PRELIMINARY DISCUSSION: EARLY THEORIES

47

36. *The Importance of Theory.* 37. *The Difficulties of Simplicity.* 38. *Theory-making in General.* 39. *Wireless-type Theories.* 40. *'Sixth Sense' Theories*

VI. THE ASSOCIATION THEORY OF TELEPATHY 54

41. *The Association Theory of Telepathy: (1) Meaning of Association.* 42. *The same, continued: (2) 'Ideas', 'Images', and 'Minds'.* 43. *The same, continued: (3) Explanation of the Theory.* 44. *The same, continued: (4) Certain Advantages.* 45. *Sub-laws of Association: (1) The Law of Recency.* 46. *Sub-laws of Association: (2) The Law of Repetition.* 47. *Conformity with the Law of Repetition.* 48. *Subjects Score on 'Unused Slips'.* 49. *Further Confirmation of the Association Theory: Rapport.* 50. *Development of the Notion of K-ideas.* 51. *Artificial K's; 'Photograph' versus 'No-photograph' Experiments*

VII. SOME IMMEDIATE APPLICATIONS OF THE THEORY 72

52. *K-ideas and Object-reading.* 53. *The Association Theory and Spontaneous Cases: Crisis Apparitions.* 54. *Application of the Theory to Ghosts and Hauntings.* 55. *Localization of Haunts.* 56. *Emotional Factors in Telepathy*

VIII. POSSIBLE OBJECTIONS TO THE ASSOCIATION THEORY 80

57. *Preliminary Remarks.* 58. *Reality of Ideas.* 59. *An Imaginary Experiment.* 60. *Reality of Ideas, etc., continued.* 61. *Apparent 'Transmission' of Ideas.* 62. *Physical and Psychical Worlds.* 63. *Note on Clairvoyance.* 64. *Note on Precognition*

IX. PROVISIONAL SKETCH OF THE MIND 95

65. *Preliminary Remarks.* 66. *The Mind as a Psychon System.* 67. *Consciousness and the Self: (1) Preliminary.* 68. *Consciousness and the Self: (2) Suggested View of Consciousness.* 69. *Consciousness and the Self: (3) Suggested View of the Self.* 70. *Cognition, Emotion, and Will.* 71. *Autonomy of Psychon Systems and Sub-systems.* 72. *Repression: Concluding Remarks.* 73. *Proposed Course of Further Discussion*

PART III: IMPLICATIONS

X. PSYCHOLOGY IN GENERAL 107

74. *Physiological Psychology: Behaviourism.* 75. *Mind and Brain.* 76. *Possibilities of Mathematical Treatment.* 77. *Psychon Groups within the Mind.* 78. *Multiple Personalities.* 79. *Apparent Demonic Possession.* 80. *Non-insulation of 'Individual' Minds.* 81. *Mediumistic Controls.* 82. *Interim Discussion*

XI. THE PROBLEM OF SURVIVAL

124

83. *Inversion of the Classical Treatment.* 84. *The Meaning of 'Survival'.* 85. *Stability of the Psychon System as the Determinant of Survival.* 86. *Effects of Perseveration.* 87. *The Post-mortem World of Images.* 88. *Corporeal versus Intellectual Interests.* 89. *Recognition, Reunion, etc.* 90. *Contact with the Physical World: Psychical Environment.* 91. *Stability of Psychon Systems.* 92. *Formation of Larger Systems.* 93. *Reincarnation: Genius and Inspiration.* 94. *The Problem of Survival: Summary and Conclusion*

XII. THEOLOGY AND RELIGION

145

95. *Introductory: The Need for a New Outlook.* 96. *History versus Myth: The True Contribution of Christianity.* 97. *The Notion of the Spirit of Man.* 98. *The Spirit of Man as the Basis of Natural Religion.* 99. *Definition of Deity.* 100. *Concluding Remarks*

XIII. GROUP MINDS AND SOCIAL SYSTEMS

153

101. *General.* 102. *Formation of Group Minds: Ideas and Crowds.* 103. *Ideas and Crowds, continued.* 104. *Group Minds: General Principles of Formation.* 105. *Group Minds among Animals.* 106. *Note on Instinct.* 107. *Group Minds and Nationalism.* 108. *The Group Mind of Nazi Germany*

CONCLUDING REMARKS: PERSPECTIVE

165

REFERENCES

171

INDEX

174

INTRODUCTION

This book labours under two serious disadvantages, neither of which do I see my way to removing. The first is that it ought to have been written backwards; the second, that it ought to be called something else.

As regards the first. The matters dealt with in Part III are such as are likely to be of interest, and are certainly of importance, to almost every one; and I believe that the possibilities and suggestions there discussed will seem to many people almost as exciting as they seem to myself. So far then as the important matter of arousing the reader's interest is concerned, the natural plan would be to put these in the forefront of the book. But they all depend in greater or less degree on the correctness of the views developed in Part II concerning the nature of the human mind and its relation to the physical world. And these views in turn are derived from the great mass of observation and experiment, briefly and roughly surveyed in Part I with which very few people are at all fully acquainted, and of which a great many have hardly even heard; so that to plunge at once into discussing the implications of these facts, without any previous account or explanation of them, would be like giving a lecture on television without any background of elementary electricity in support.

Thus the rational order of development, from observation and experiment to theory and explanation, and from theory to implication and consequence, is the reverse of the order of interest. I do not see how this is to be avoided, so the reader must be prepared for a fairly long spell of relatively dull matter before he reaches the excitements. But there is nothing to prevent him skipping, and if he likes to begin with Part II—or even Part III, though I should not advise it—and work back again as necessary, I do not think he will come to much harm.

As regards the title, the position is this: there has been collected from time to time, partly from everyday life and partly in the laboratory or by special experiments, a very large number of observations which suggest—indeed, demonstrate—that at least certain people under certain conditions can acquire knowledge of past, or distant, or even future events, etc., which cannot be accounted for by the ordinary methods of sense perception and rational inference. Sometimes it seems as if this knowledge must be derived from some other mind than that of the person who acquires it (personally, I think at present that this is always so, but I may be wrong); in other cases, on the face of it, it looks more as if some kind of 'sixth sense'—I speak rather loosely—were at work, and no activity by another mind involved.

Traditionally, the name 'Telepathy' is given to the first class of case and the name 'Clairvoyance' to the second. Literally, the word 'Telepathy', derived from the Greek, might be translated 'Distant Feeling'—it is a kind of hybrid between, say, *Tele-phony* ('Distant Sounding') and *Sym-pathy* ('With-Feeling'). But 'feeling', which mostly implies such bodily sensations as aches and pains or warmth and cold, or such states of mind as joy or depression, is too narrow, and the term does not of itself suggest that more than one mind is concerned. Its meaning has therefore been extended by common consent to conform to the classical definition given by Myers (38)¹ as "the communication of impressions of any kind from one mind to another, independently of the recognized channels of sense"; and this, I think, is very approximately what it means to the general public, who also use the terms 'Thought reading' and 'Thought transference' more or less interchangeably with it.

But of recent years there has been a strong tendency among students of the subject, especially among the experimental workers, to avoid using either Telepathy or Clairvoyance as names for the facts they were studying, on the ground that each involved a kind of prejudgement as to the nature or explanation of the facts, to which they did not care to commit themselves. So Rhine speaks of "Extra-Sensory Perception"—usually abbreviated to "ESP"—and Dr. Hettinger of "The Ultra-Perceptive Faculty"; but both are open to objection, though the first has been so widely adopted, especially in America, that it is unlikely to die out for many years to come. I myself have usually talked about "Paranormal Cognition", which simply refers to states of awareness or knowing (cognition) brought about by means which work alongside of (para-) but are different from the normal. I think it is preferable to either of the other two; but, like the universal languages, no one uses it.

On the other hand, there is a whole range of phenomena, which most students (and I certainly) believe to be closely allied to 'Telepathy' and 'Clairvoyance', which none the less do not fall at all neatly under either heading. If, for example, you see an 'apparition' of a friend, and interpret this as meaning that he has just died, or is just about to die, and then hear of his demise, there is at least a suggestion that you may have acquired knowledge otherwise than through the ordinary channels of sense or by rational inference; yet it would be rash to jump to the conclusion either that another mind is involved, or that you are exercising some sort of extra 'sense'. Yet I think there can be very little doubt, for reasons which I shall try to explain, that all these phenomena, from the experimental victim guessing unseen cards in the laboratory to the full-fledged Ghost, Spook or Spectre, are so closely inter-connected that properly to understand one is—in principle at least—to understand

¹ Numbers in brackets refer to the books, etc., listed on pp. 171 ff., below.

all. If so, we evidently need some much more comprehensive term than any of those mentioned above.

To meet these difficulties, Dr. Thouless proposes (65, pp. 4-5) the use of the term "psi phenomena", suggested by Dr. Wiesner, to refer to all effects of this general kind, without prejudice as to their precise nature or explanation. I think this is by far the best suggestion yet, as the term is entirely non-committal, admirably short, usefully flexible, and has a natural connexion with the subject, since the words 'psychology', 'psychic', etc., are derived from the Greek "psukhē" (soul or mind) of which the first letter, Ψ, is called "psi".

Unfortunately, however, to call the book "Paranormal Cognition" or "Psi Phenomena", as I should prefer to do, would probably be as good a way of stopping people reading it as any that could be devised. And this would be a pity, because I believe that on a long-term view the subject is about the most important that there is for the world of to-morrow, for reasons which I shall outline in a moment.

So "Telepathy" must stand, even though I shall be covering a much wider range than is commonly understood by the term. It is at least tolerably familiar; indeed, almost everyone one meets has some more or less 'queer' incident to relate, at first- or second-hand, which suggests that something of the kind has occurred and is not too easy to explain away on normal lines. It may be no more than receiving an unexpected letter from a friend who seldom writes, just after one has been thinking of them; it may be a dream which afterwards proves to have been true; it may be that a 'medium' gives information about oneself or a deceased relative which 'she simply could not have known' by any normal means; in rarer cases, there may be a visible 'apparition' of a friend at or about the time of his death, or some other important event in his life; or it may be a case of the almost magical transmission of news in a savage country lacking 'civilized' means of communication.

Sometimes it is easy enough, and doubtless correct, to explain away such happenings as these by one normal cause or another—and sometimes less easy; but whether easy or difficult or impossible, all such cases involve, on the face of them, the acquisition of knowledge in a way which ordinary physics and physiology cannot account for, and all are accordingly suitable objects for our critical scrutiny.

As regards the importance of the subject: The whole of Part III is devoted to a discussion of the way in which the theoretical conclusions to which the facts lead us seem to throw light on entire fields and tracts of thought, as well as on particular problems, which are universally recognized as being of first-class importance.

At this point, I only want to state the case in the most general possible way, and merely lest the reader should feel inclined to dismiss the whole topic with the comment "All very curious and

interesting, no doubt, but I don't see that it has anything to do with practical life".

First let me make it clear that I do *not* think the importance of Telepathy to lie in any prospect of its one day superseding wireless and cables as a means of communication. I do not think that we shall see beavies of highly trained telepathists transmitting Wall Street prices to stockbrokers, or that we shall be able to save ourselves the trouble of writing letters by psychically ringing-up our friends. Still less do I imagine that we shall employ telepathic specialists to read the thoughts of our rivals in peace or war, or to pick the brains of the learned and convey their contents to our own with no trouble to ourselves.

The importance of telepathy, I think, goes very much deeper than that, and arises more or less as follows: We have only to look at the world to-day, convulsed with the most destructive war in history and desecrated by the most hideous sufferings and atrocities, to realize that mankind has not been very successful in organizing his collective affairs. In his dealings with the material world he has been incomparably cleverer than any other species of animal which has ever appeared on the earth; and there seems to be virtually no limit to his abilities in this direction. But his cleverness (which is a matter of dealing with things) has so far outrun his wisdom (which is a matter of values) that, unless the second catches up considerably with the first, and that without undue delay, there seems a very fair prospect of his destroying himself altogether, or at least allowing himself to be reduced to a state of misery and servitude in which life will be barely worth the living.

This is, indeed, pretty widely realized, and very many people who have the happiness of humanity at heart are correspondingly concerned to find out what is wrong and to devise a remedy. Most of them have one or another pet panacea, the adoption of which, they are sure, will put everything right, and these range from a fuller acceptance and practice of one of the established religions, through Occultism and Higher Thought, to Socialism, Communism or some other political system, and even to Technocracy or deep breathing.

Of these suggested panaceas, some will doubtless prove valuable and others less so; but those that do, or would do if they were tried, can succeed *only* because and in so far as they agree with the actual needs of man—of man as he actually is, as opposed to what some enthusiast thinks he could or should or might be. Now, we are beginning to know quite a lot about man's body, about how much food he needs, and the right kind of clothing and housing for him, and how to keep him healthy, and how he is attacked by microbes and affected by deficiency of vitamins; but, relatively speaking at least, we know extraordinarily little about man's mind and its relation (if any) to the rest of the universe. And, after all, it is his state

of mind which determines—indeed, which *is*—his happiness or otherwise. A certain minimum standard of material well-being is necessary, it is true, to enable him to support life at all, let alone be happy in it; but, after that, it is the mental factors which count—and, above all, “freedom from fear”. Even as regards the necessary minimum of material well-being, it is mental factors alone which prevent us from securing it, and more, for all. Our control over natural resources, our physical ability to grow, to manufacture, and to distribute all we need, is amply sufficient for all reasonable purposes even as it stands, and is increasing every day. It is only political dissensions, industrial disputes, financial complications, and the like, which prevent us (in a very few years at any rate) from all living in security and decent plenty on a few hours work a day; and all these are, or arise from, psychological states, not from the nature of the material world. Above all, war itself—almost the worst of disasters—is not something imposed upon us from without, like an earthquake or a volcanic eruption or a drought; it occurs because some considerable number of people desire it, either for its own sake or as a means to an end, or others accept it as less bad than some intolerable alternative, such as slavery or injustice. In each case we are again concerned with a psychological matter—with what goes on inside men’s heads, to put it colloquially; and until we have got to the bottom of this, and put it right, the trouble will always be liable to recur, no matter how hard we may try to prevent it.

It follows to demonstration, I think, that our *basic* trouble may fairly be described as an insufficient understanding of man’s mind, and that any inquiry which throws light on this is likely to be helpful. This after all is only common sense. If we are dealing with material structures, we cannot expect them to stand up unless we have first studied the properties of our raw materials and built in conformity with them; if, for example, we were to build a bridge of timber cut all across the grain, it would not be surprising if it fell down. But in building social structures, i.e. political systems and the like, our raw material consists of human beings and particularly their minds; and if we do not understand the fundamental properties of these, our structures are likely to collapse.

I should like to point out here that it is not only the most obvious properties that may prove vitally important. The expansion of metal with heat, for example, is a property which seldom forces itself on our notice; yet, if we lay railway lines or build airplane engines without allowing for it, the lines buckle and the engines seize up. If on no other grounds than this kind of analogy it would be reasonable to suggest that the kind of thing we are here concerned with *may* be of vital importance, and is therefore worth thorough investigation.

But evidently there is very much more to it than this. If Telepathy

and similar happenings occur at all, they clearly point to some fundamental property of mind and not to some merely trivial peculiarity; they must point, I submit, to some 'order of reality' (to use a not very agreeable phrase) as important to the proper understanding of the mental world as electricity to the understanding of the physical world. We have only to reflect how enormously our knowledge of the latter, and our control over it, was advanced by our study of electricity to realize that, if there is even an outside chance of history repeating itself, we should be wise to pursue the study of telepathic phenomena with the utmost urgency and zeal.

Treatment in this book. It will be easily understood that, in a book of this size, it simply is not possible to dot all the 'i's' and cross all the 't's' of every argument, or to give detailed figures in support of every contention. Many statements will accordingly have to be made without the full explanations, qualifications, and cautious reserves which I should like to append to them in a more comprehensive work. For such details the interested reader must consult the original papers, to which I shall give references wherever possible; but I shall do my best not to omit any point of basic importance and not to say anything which can possibly be misleading.

It has also seemed best to me to write, as will already have been noticed, in a distinctly informal style. In the first place, I have no desire to lay down the law to the reader, but rather to take him into my confidence and show him, to the best of my ability, just how the matter stands, and with this attitude formally phrased pontifications would not well agree. In the second, although I have extensively inherited and built on the work of others, which I outline in the first Part and hereby most gratefully acknowledge, the responsibility for the contents of the second and third Parts is almost entirely my own; and I feel it would be failing in my duty to my readers if I were to present them in so impersonal a way as to suggest that they constitute an established body of opinion, having an authority against which there is no appeal. This is not to imply, I hasten to add, that the suggestions and views in question are mere airy speculations woven from the fantasies of my inner consciousness and supported by nothing weightier than my own ingenuity. On the contrary, subject to a few minor reservations here and there, they seem to me, in outline at least, to be unescapably forced upon us by the facts; and facts are very much more cogent than any authority, my own or another's, could possibly be.

In this sort of connexion, and to preserve perspective, it is worth commenting on a type of remark one fairly often hears to the effect that some obscure happening—e.g., a certain real or supposed phenomenon of 'mediumship'—is "all due to telepathy", as one might say that some pathological condition is "all due to lack of vitamins" or "merely a matter of bacterial infection". This suggests

that telepathy is an accepted fact of official science, which may be called in for explanatory purposes just as vitamins and bacteria may be; but we have not yet reached this stage, though I think it is not far off. Very many scientists, it is true, will freely admit, in their private capacity, that telepathy is almost certainly a fact in nature, for they come across incidents which it is very difficult to explain in any other way just about as often as ordinary mortals do, and find them little easier to evade. And I very much doubt whether any individual scientist who has taken the trouble to study the evidence honestly and thoroughly has ever failed to reach the conclusion that it is overwhelming. But the necessity for not only undertaking individual study but forming individual judgements on points of evidence, coupled with the difficulty of repeating observations at will, and the complete absence of any explanatory theory, has hitherto prevented general and public acceptance by the scientific world as a whole.

Events, however, are moving rapidly, even in the academic world. For some years now, Duke University in America has given Dr. Rhine full backing and departmental facilities, while Harvard has the Hodgson Fund devoted to this class of work. In this country, Trinity College, Cambridge, accepted a few years ago the Perrott benefaction for founding a studentship in Psychical Research; and the Trustees of the Leverhulme Research Fellowships—which certainly are not endowed for the purpose of subsidizing wild-goose chases—have recently made a grant for the furtherance of work on these lines. I should not be at all surprised if we were to wake up one morning and find that an ‘honourable capitulation’ had taken place overnight, or even some of the strongest sceptics declaring that they had known all about it all the time.

PART I: FACTS

CHAPTER I

SPONTANEOUS CASES

1. *The Earliest Recorded Experiment.* Although this section is headed Spontaneous Cases, I cannot refrain from mentioning here, as a matter of historical interest, the first piece of Psychical Research work on record, despite its essentially experimental character.¹

According to Herodotus (22), Croesus King of Lydia, who reigned from 560 to 546 B.C., alarmed at the growing power of the Persians, decided to consult an oracle as to what he should do; very intelligently he decided also to test various oracles (six Greek and one Egyptian) to see which seemed the most gifted. He accordingly sent out seven messengers, all starting on the same day, with instructions that, on the hundredth day after their departure, each should ask his oracle, "What is King Croesus the son of Alyattes now doing?" The answers were to be written down and brought back.

None of the replies remain on record except that of the oracle at Delphi. There, the moment the Lydians entered the sanctuary, and before they put their questions, the Pythoness (i.e., the priestess) thus answered them in hexameter verse:

"I can count the sands, and I can measure the ocean;
I have ears for the silent and know what the dumb man meaneth;
Lo! on my sense there striketh the smell of a shell-covered tortoise,
Boiling now on a fire, with the flesh of a lamb in a cauldron,—
Brass is the vessel below, and brass the cover above it."

When the messengers returned and the various answers were read by King Croesus, he declared that this was the only acceptable one. For, he said "on the departure of his messengers he had set himself to think what was most impossible for any one to conceive of his doing, and then, waiting till the day agreed on came, he acted as he had determined. He took a tortoise and a lamb, and cutting them in pieces with his own hands, boiled them both together in a brazen cauldron, covered over with a lid which was also of brass."

No doubt the sceptics of the time declared that it was 'mere coincidence', though it would rank as a pretty good case by any standards, and I wish we could give King Croesus a job as a research worker to-day; he had the root of the matter in him.

2. *The Society for Psychical Research.* But although the first experiment took place so long ago, the subject languished for more

¹ I am indebted for this to a paper (45) by Professor H. H. Price of New College, Oxford.

than two thousand years. There are, of course, plenty of mentions of spirits and divinations and warning dreams to be found in the writings of the ancients, and since the invention of printing innumerable books on these subjects, and on magic, witchcraft, demonology, haunts, occultism and so forth have been published—let alone the enormous if seldom profitable literature of modern spiritualism.

Apart, however, from sporadic attempts by individuals, there was no scientific study of the subject worthy of the name until the foundation of the (English) Society for Psychical Research in 1882, quickly followed by its American counterpart. The very first of its objects mentioned is "An examination of the nature and extent of any influence which may be exerted by one mind upon another, apart from any generally recognized mode of perception" (62), and this, which is very approximately what we mean by Telepathy, has been one of its major interests ever since.

For very many years the work of the Society in this connexion necessarily consisted mainly in the collection and critical examination of what are called 'spontaneous' (as opposed to 'experimental') cases. A certain number of deliberate experiments was, it is true, inaugurated; but although some of these yielded apparently successful results, few of them would be regarded as unreservedly acceptable by modern standards. This is no reflection on those who performed them; it is simply that the necessary techniques had not then been worked out, and contemporary knowledge was insufficient either to guard against all possibilities of error or properly to assess the value of the results obtained.

3. *Spontaneous Cases.* As I have indicated on page xi above, there is a wide range of what I may roughly term 'anecdotal' material currently reported, which, on the face of it, is more or less relevant to any inquiry of this kind. It was this mixed mass of popular experience and belief, from water divining to haunted houses, from crystal-gazing to premonitory dreams, from veridical hallucinations¹ to 'table-turning', that the early pioneers set themselves to sift and analyse. Let any one who thinks their task was enviable try to follow up a single case of the kind to its roots and test its credentials—and then reflect on what was involved in collecting and examining the hundreds of cases now on record.

I do not propose, at this stage, to describe any instances of apparent spontaneous telepathy. For these the interested reader may consult the *Proceedings* of the Society, F. W. H. Myers's great book on *Human Personality*,² Edmund Gurney's *Phantasms of the*

¹ An hallucination is an apparent perception which has no objective counterpart within the field of vision, hearing, etc., as opposed to an 'illusion' which is the misinterpretation of some object actually present to sight, etc. An hallucination is termed 'veridical' if it corresponds to a real event happening elsewhere.

² This was originally published in two volumes by Longmans in 1903. A much abridged edition at 3s. 6d. appeared in the Swan Library (same publishers) in 1935.

Living (21), which are the great classics of the subject, or the more recent semi-popular literature, such as Mr. Tyrrell's *Science and Psychical Phenomena* (73).

But I do want to say a good deal about the kind of thing they did and the kind of perspective in which their conclusions should be viewed.

Suppose we meet some one who tells us that one night, two or three years ago, she dreamed that her brother had been killed in a train smash, and that the very next morning she received a letter informing her that this event had actually occurred. What kind of questions must we ask before we can be satisfied that this is an authentic case of some one obtaining knowledge of an event by means independent of the recognized channels of sense and inexplicable on normal lines? What are the possibilities of error? First, of course, there is the simplest possibility that the lady is a plain liar, and has invented the incident merely to impress us and attract attention to herself. We must therefore start by taking steps to find out whether she really has a brother, and whether he was in fact killed in a train smash. This is relatively easy, and the number of people who attempt bare-faced hoaxes of this kind appears to be mercifully small. Much more serious, however, is the possibility of misremembering, and particularly of misdating. It is possible, for example, that she might have dreamed of the smash *after* she got the news, but was so impressed by the vividness of the dream that she transposed the dates and came seriously to believe that they were in the order reported. We must therefore find out whether she mentioned the dream to any independent witness before receiving the letter, and particularly whether she, or the witness, made a note of the fact at the time. Then we must tactfully interrogate the witness and try to decide whether he is reliable. We must also consider the further possibility that she really did have a dream of some kind about her brother before he was killed, but not specifically of his being in a train smash, and later combined the two factors into one.

Next the question arises of whether she may, without realizing it, have obtained normal knowledge of the smash and dramatized it into a dream. For example, the smash might have occurred several days before the receipt of the letter, and some account of it might have appeared in the press. The lady might well have read a paragraph about it without paying any special attention to it at the time, and might well have forgotten the reading; but if the account mentioned a district in which her brother was living (or even, perhaps, if it did not) this might, so to say, subconsciously combine with her natural interest in her brother to produce the dream.

Finally, when we have dealt with all these possibilities, and any others we can think of, and before we can approach the problem of

how to interpret or explain the occurrence, we must ask ourselves whether it can fairly be ascribed to *coincidence*. This is a vitally important matter and deserves a few paragraphs to itself.

4. *Coincidence*. If, in peace-time, I dream of my friend George eating eggs and bacon for breakfast, the only point of interest (if any) is why I should elect to dream of anything so trivial and commonplace instead of something more interesting. We should not regard it as evidence of 'paranormally'¹ acquired knowledge, simply because the eating of eggs for breakfast is so common a habit of peace-time man as to call for no special comment. But if I were to dream that he was eating a *cassowary's* egg, and found that he had actually done so, then—possibilities of the kind indicated above being excluded—it would be a very striking case; for it is extremely rare (or so I suppose) for any one to eat cassowary's eggs for breakfast, and I at least have never dreamed of any one doing so.

Note particularly here that, if I made a habit of dreaming in these terms, the value of the case would be destroyed, just as it would be if I knew that my friend made a habit of breakfasting on cassowary's eggs. In order to be able to form a reasonable opinion as to whether an observed coincidence of events (e.g., the dream and the eating, or the dream and the smash) can plausibly be attributed to 'mere chance', it is necessary to know how often *each* of the two (or more) factors concerned normally occurs. Unfortunately, in practice we can very seldom do this, and our inability to do so has provided the sceptical critic with his sharpest weapon.

5. *Cumulative Evidence*. I have used the words 'sharpest weapon' advisedly, and in preference to 'strongest reasons for doubting', because I think it more accurately represents the case. As I shall explain when I come to consider Objections and Criticisms on pp. 41-46 below, I think that most scepticism has been a matter of emotional resistance rather than of rational criticism; and I do not believe that the main conclusions of the early pioneers would have met with much opposition if they had been able (as of necessity they were not) to fit them neatly into the pattern of contemporary knowledge and thought.

However this may be, the sceptics could always object, and frequently did object, that although we might, for example, form a pretty accurate estimate of the number of people killed in train smashes, and therefore of the likelihood of a randomly selected person being so killed on a given date or within a given period, we

¹ With apologies to the reader, if necessary, I propose to allow myself the use of the word 'paranormal' to refer to any facts which cannot be explained by existing physical laws or any foreseeable extension thereof. It is the modern successor to the older terms 'supernatural' and 'supernormal', which have been largely abandoned nowadays as carrying objectionable implications of one kind and another. Paranormal is harmless enough, except that it rather suggests that occurrences of this kind happen only to non-normal people, whereas I believe that they habitually happen to every one, though in so slight a degree as to be seldom recognized.

could form no estimate whatever of how many people dream of train smashes on occasions when no train smash occurs, but make no note of it, or of how many of those who *do* make a note of it *omit to report* the fact when there is no significant sequel.

In other words, and more generally, the objection raised to all conclusions based on spontaneous phenomenon reduces to this—that it is no use saying vaguely that such and such a coincidence is ‘very unlikely’ to have occurred by chance alone, even if, on ‘common-sense’ grounds it manifestly is so; to do any good you must be able to say just *how* unlikely it is—whether, that is to say, it represents odds of ten or a hundred or a thousand to one; and that to do this requires the possession of data which the circumstances of spontaneous cases can never fully provide.

There is a great deal of weight in this objection, which is indeed strictly unanswerable as it stands, and I do not think it is properly met by the usual counter-argument. This, commonly known as the ‘faggot theory’, avers that, just as a bundle of twigs may be very strong, though each individual member of it is easily broken, so the cumulative effect of a large number of cases constitutes much stronger evidence, and is rightly felt as much more convincing, than any single case, even if each case taken by itself is open to the type of objection just discussed. I think this is based on a false use of analogy, and that it is adequately met by changing the analogy and pointing out, as I have done elsewhere, that ten leaky buckets will not hold water longer than one leaky bucket, even if the leaks are in different places.

6. *Value of the Spontaneous Cases.* But although I have often insisted myself on the importance of this kind of objection, I think it would be the height of folly, and indicative of nothing but an irrational bigotry, to underestimate the evidential value of the work done on these spontaneous cases by the early pioneers and their successors.

The proper logic of the matter seems to me to be this: It is not to be expected that the study of spontaneous cases will ever afford absolute *proof* of the acquisition of knowledge by paranormal means, for absolute ‘proof’ is confined to subjects, such as pure mathematics, where the conclusions reached are implicit in the definitions of the quantities, etc., discussed; but there seems no reason whatever why it should not lead us to conclusions such that we may feel confident that we are very unlikely to be wrong. In all the non-experimental sciences, such as Archaeology, Anthropology, Etymology, perhaps History, and so forth, we find a very comparable state of affairs, in which evidence of varying degrees of reliability must be sifted and analysed and judged and balanced to the best ability of those concerned with the subject. And we find that when this is done by men of integrity and competence, *using the highest possible standards of*

criticism (this is vital), it is rare for them to come to conclusions (or at any rate to hold them for long) which are not subsequently confirmed in their main features.

But the pioneer workers of the Society—people like Myers and Gurney and Podmore, and Professor and Mrs. Sidgwick, and Sir William Barrett, and later Sir Oliver Lodge and the Verralls, were, I should judge, at least the equals of any corresponding group in any other comparable subject; and they certainly set a standard in this one (which I think it fair to claim the Society has maintained ever since) that has seldom been equalled and never surpassed. It accordingly seems perfectly legitimate to infer, on strictly logical grounds, that they are very unlikely to have been wrong in their main conclusions to the effect that cases of apparent telepathy and the like are *not* to be explained away by any combination of carelessness, misreporting, or deliberate or unwitting falsification.

7. *Value of Spontaneous Cases, etc., continued.* Those who, like myself, have concentrated mainly on experimental work, and have urged the importance of using exact methods of assessment wherever possible, are often accused of underrating, or even disparaging the earlier work of the kind I have just been discussing.

This is a complete misapprehension. I yield to no one in my admiration not only for the courage and zeal of the great pioneers, but for their solid achievements, which have not yet borne full fruit. Without them there would, to all intents and purposes, be no subject at all to work in; and they have collected for us a mass of invaluable material which we have not yet learned fully how to use.

What I do say is that their methods were insufficient of themselves to permit any very considerable progress to be made; and that they need supplementing by others of a more definitely experimental type in order to enable us to reach the kind of conclusions we need. And to say that a goldsmith needs to use hammers and graving tools in order to complete a work of art is no disparagement of those who prospected the terrain, located the gold, mined the ore and assayed the metal.

The reason why no amount of collecting of spontaneous cases will ever, in my judgement, enable us to pass beyond a certain point—or, if at all, then only intolerably slowly—is, I suggest, simply because even the simplest case of the kind is too complicated to be amenable to the kind of treatment necessary to show us the underlying laws. In my imaginary case, for example, are we to concentrate on myself, or on George, or on the nature of dreams as such, or the mystical qualities of breakfast-time, or the properties of eggs, or perhaps even those of cassowaries? We have virtually nothing but guesswork to guide us, and little chance of repeating the observation. Matters would be different if we could do so, for we might find that my dreams ‘came off’ with cassowaries’ eggs but not with hens’ eggs,

or with any sort of egg but not with tomatoes, or with breakfast but not lunch, or with George but not Henry, and then we should have at least a point of departure. Unfortunately this is not the situation, and different cases contain so few common elements that it is scarcely practicable to use even a large number of them as if they were minor variations on the same theme in the kind of sense I have just imagined.

I believe that this is the essential reason why, after fifty years of work—in 1932, say—we knew very little more *about* Telepathy, etc., though we had a much firmer and better founded assurance of its occurrence, than we did when we started.

But we have now had some ten years of fairly intensive experimental work, and we are beginning to understand (or so I believe) the kind of mechanisms underlying telepathy, and the kind of way they work. I strongly believe that, in the light of this understanding, we can turn back to the great accumulation of cases which the pioneers have bequeathed to us and re-examine them with increasing profit; in short, the spontaneous cases, after a considerable period of neglect, will come into their own again.

8. *More cases needed.* But great as is the mass of material which has been collected, we urgently need more. This is not merely because, on general principles, we cannot have too much; it is because, as we begin to understand what is happening we know better what points are important and what questions to ask. I myself seldom read one of the older cases, especially those of hallucination, without wishing that I could question the witnesses on various matters which it never occurred to the original collectors to raise.

It is accordingly greatly to be hoped that any reader who has had any experience of this general kind, no matter how queer or how trivial—and I am tempted to say the queerer and more trivial the better—will do the subject the service of communicating it (in confidence, of course, if desired) to the proper quarter,¹ namely the appropriate Society, which, incidentally, all interested persons should join.

¹ The Hon. Secretary, The Society for Psychical Research, 31 Tavistock Square, London, W.C.1; or The Secretary, The American Society for Psychical Research, 40 East 34th Street, New York.

CHAPTER II

EXPERIMENTAL WORK: INTRODUCTORY: SOME EARLY EXPERIMENTS

9. *Experiments in General.* Although most of the work on which Parts II and III of this book are based has been done in the last ten years or even less, no picture of the subject, such as I am trying briefly to outline, would be complete without at least a glance at some of the earlier experimenters, many of whom deserve more credit than they have hitherto received. But first I should like to say a few words about the characteristic features of experiments in general.

We have seen that although the spontaneous cases—the dreams and crystal visions and veridical hallucinations—afforded at least a strong face-value case for supposing that something like telepathy, etc., occurs, they suffered from two great disadvantages; it was virtually impossible to assess accurately the probability of their being due to chance coincidence, and they were far too complex for practicable analysis.

In experimental work, which is otherwise governed by the same kind of requirements as regards exclusion of possible hoaxing, inadvertent acquisition of information, etc., we try to get over these difficulties by starting, as it were, at the other end. Instead of waiting for something to happen spontaneously, and then attempting to assess and analyse it in retrospect, we deliberately *invite*, so to say, some particular kind of coincidence to occur; and we make sure before we start either that we know what the chance probability of its occurrence is, or can easily find out, and that the situation is not, so far as we can make it, of so complex a type as to defy analysis.

Thus, we can draw a card at random from a shuffled pack and ask some one to guess what it is¹—taking care, of course, that he cannot see it; or we can throw a die, and ask him to guess which face comes uppermost; or we can draw a simple picture or diagram, and ask him to guess what it represents, or to ‘reproduce’ it as well as he can—strictly, of course, under the same conditions of being unable to see it or obtain knowledge of its content in any normal way.

Each of these events is relatively simple, and in the first two instances it is easy enough to calculate the precise probability of any result obtained being due to chance alone. Using an ordinary pack

¹ In the psychological laboratory, the persons on whom such tests as these are made are always known as ‘subjects’. I shall use this word here where necessary, though I do not very much like it because of the possible confusion with the antithesis of ‘object’; hence my use of the word ‘percipient’ in my own papers on the subject.

of playing cards, for example, we should expect our subject to make, on the average, one right guess in fifty-two; and if he scores much above this average we should conclude that some factor other than chance was operating. If for example he were to score thirteen successes¹ in five runs through the pack, instead of the expected five, we should say that chance was almost certainly excluded; for it is a matter of no more than quite easy mathematics to show that the probability of this occurring by chance alone is less than one in a thousand. Similarly, if the die be unbiased, his chance of guessing right is one in six, and if he were to obtain, say, eleven hits in twenty-four throws, we should come to the same conclusion; for again it is easy to show that the probability of such a result being due to chance alone is less than one in a thousand.

Of course, if the die were biased, and the subject happened to have a preference for the values which tended to come up more often than they should, we would naturally be liable to obtain a spuriously high score, which would be misleading. This sort of thing is easy enough to allow for if full details are available; but it is very necessary to be on the look-out for similar sources of error throughout this class of work.

I do not propose to weary the reader here with an account of the mathematical methods used in calculating these probabilities, or in making the corrections, etc., appropriate to special circumstances. Few people would find them interesting, and most very much the reverse; those who do may consult the original papers and suitable mathematical text-books. But there are two points I should like to deal with briefly before I pass on to actual work done.

10. *Significance and Chance.* I shall have occasion below to speak of certain results as being 'significant'. This, in such contexts, is a purely technical term meaning that the result in question is such as would not be bettered by chance alone oftener than once in twenty such experiments. If the result shows a probability bigger than this, such as one in ten or fifteen, it is judged to be 'not significant' and the experiment is more or less ignored; if it is as small as one in twenty or smaller, it is considered that chance as an explanation may be regarded as excluded. The choice of one in *twenty* is entirely arbitrary, but is a standardized convention among those who use probability methods; there is, however, nothing to prevent any one accepting a lower or demanding a higher 'level of significance', i.e., a larger or a smaller probability,² in particular circumstances, provided he makes clear what he is doing. If one is more anxious not to let anything interesting get past one then to avoid being occasionally led astray on a wild-goose chase, one will tend to follow up

¹ A successful guess in this class of work is commonly called a 'hit', and I shall use this term below whenever convenient.

² A 'high level of significance' corresponds to a small value of the probability; a 'low' level to a large value.

experiments yielding results with chance-probabilities perhaps so large as one in ten; if one is specially concerned to exclude chance, one may not be satisfied with anything larger than one in a hundred.

It is all a matter of being clear as to what one is doing and what tests of this kind are for. Their sole function is to exclude, or virtually exclude, *chance*, by which term we refer to the operation of a large number of small independent causes, as opposed to one, or a very few, large causes. They never 'prove' the occurrence of telepathy, etc.; by excluding chance to whatever extent they do, they merely show that *some* other cause is probably operative, not what that cause is. The step from the decision that a result is very unlikely to be due to chance alone to the decision that the non-chance factor must be telepathy or the like, can only be assured by the experimental set-up, which must be so designed as positively to exclude all possibilities of normal sensory knowledge or rational inference, thus leaving chance and telepathy as the only alternatives; it can never be assured by the probability treatment alone, however great the anti-chance odds attained.

A classical and by no means undiverting example of how even the most eminent may be led astray in this sort of connection is afforded by a paper on "The Scientific Aspect of Monte Carlo Roulette" by the late Professor Karl Pearson (40), who was a very great statistician indeed. Taking his data from a little paper called *Monaco*, which purports to record the results of all spins week by week, he showed that the frequencies of occurrence of the thirty-seven different numbers (zero included) over a period of four weeks varied to an extent that could not plausibly be attributed to chance alone; in fact the odds were about two million to one against it. From this he drew the somewhat startling conclusion that "roulette as played at Monte Carlo is not a game of chance". It is easy to see that there is a serious gap in the logic here, bridged only by that amiable simplicity that is so endearing a characteristic of the great; for he *assumed* that the figures given in *Monaco* were accurate records of what took place at the tables, whereas it seems only too easy to my cynical mind to suppose that the contributor found it easier to compile them out of his head in the comfort of the nearest café, rather than weary himself watching the play in the rooms.

11. *Cards and Drawings.* There are important differences between experiments using cards, dice, etc., as test material and those using drawings or diagrams. With the former there is no difficulty at all, in principle at least, in deciding what the probability is that the subject will guess rightly by chance alone, even though we may have to make corrections later for bias or preferences.

But with drawings we have no such antecedent knowledge of probabilities. If I draw a card at random from a shuffled pack, I know that your chance of guessing it correctly will, in general, be one

in fifty-two; but if I decide to draw, say, a Dog, and ask you to guess, or try to 'reproduce', what I have drawn, I have no idea at all what the probability of your doing so is, if you are merely guessing and there is nothing paranormal at work. Again, how can we be sure that my decision was 'random'? Possibly I am a fanatical dog-lover, or perhaps I have been reading something about dogs in the morning paper; and perhaps you have too. If so, then I might be specially likely to draw, and you might be specially likely to guess, the object 'Dog', rather than any other object that I might otherwise have drawn; and this would evidently tend to produce a spurious appearance of telepathic action though there might really be none.

It is easy to see that experiments with drawings will need special precautions and special methods if their results are to be reliable. As a matter of history, it was not till 1938 that anything like a truly satisfactory method of assessing experiments with drawings was suggested by W. L. Stevens; and not till 1941 that I evolved a convenient and flexible way of dealing with them from a method first proposed by Professor Fisher for scoring partial successes with playing cards. I shall have a good deal to say about this at a later stage.

None the less, though drawings are so much less easy to deal with than cards, etc., they have very great advantages. They are more interesting to work with, both for subjects and experimenter; compared with cards, they have much more 'content', so to say; and their almost infinite variety, and the corresponding uniqueness of the particular drawings used as 'targets' (commonly and hereafter known as 'originals') enables one to keep track of them, as it were, and to study such points as the effect of several experimenters working at once, in a way which the very limited number of sorts of cards makes quite impossible.

12. *General.* I will now give a brief account of a few cases of relatively early experiments, which seem to me to be worthy of notice, though it should be understood that they add very little to the main weight of the evidence derived from later researches. Experimental work, as I have said, only got properly into its stride about ten years ago, and much of the most informative is of even more recent date. But students of the subject have been trying experiments from the earliest days and with all kinds of materials, and many of them have claimed very remarkable results. Most of these must now be rejected, not, in my opinion, because they were in fact unsound (though, of course, some of them probably were), but because the early workers simply did not tell us enough about the precautions they took and the conditions of the experiments for us to be sure that they excluded every source of error. But even when we have drastically eliminated all that seem at all suspect, there is quite enough left to show that the more recent work is no new

thing, born suddenly and for no apparent reason out of nothing, and without precedent; though improved technique, and the larger scale on which the work has been done have enabled us to obtain much more convincing and informative results than the earlier experimenters could hope to do.

I have chosen the cases discussed below because they all possess some feature of special interest—usually some odd twist unexpected or even unnoticed by the experimenter, and all the more convincing for that; while in at least two cases the experimenter was so hostile to the idea of telepathy as vigorously to deny that he had obtained any positive result at all.

13. *Usher and Burt*. Consider first the experiments conducted by Usher and Burt (74) almost forty years ago. In addition to various trials with diagrams, which need not concern us here, these workers did a series of thirty trials with ordinary playing cards, in which the experimenter was located in Bristol and the subject, or 'guesser' in London; all possibility of the one knowing by normal means what card the other had drawn was accordingly excluded. Six trials were made on each of five evenings, and two completely correct hits (one of them an alternative guess) were scored. This is not impressive, but the authors give full details of the cards drawn and guesses made, and when we study these closely we find there is an apparently remarkable number of partial successes or 'near misses', such as guessing the two of clubs when the four was drawn, or the six of diamonds when the true card was the six of spades, and so forth. Now at the time that Usher and Burt did their work, there was no method known of dealing with this sort of thing, and it was not until 1924 that a satisfactory way of doing so was devised by Dr. (now Professor) Fisher. (18)

When I applied this method to the Usher and Burt data, I found they had achieved a degree of success such as would occur by chance alone only once in about a hundred and ninety such experiments. Moreover, the degree of success dropped off from the first evening to the last in a way which again could not plausibly be attributed to chance, with odds of about 175 to 1 against.

So chance is out of it, humanly speaking, and normal perception certainly cannot be stretched from London to Bristol. In order to avoid telepathy, or something of the kind, we should have to suppose that the experimenters faked up a batch of data, for which they claimed nothing at the time, in anticipation of some one discovering a way of dealing with them more than ten years later.

I must confess that this case has always struck me as extremely convincing.

14. *Coover*. I include this work mainly because it has often been cited in support of the contention that when experiments in telepathy are conducted by a sufficiently careful and conscientious worker,

and with adequate precautions against normal perception, etc., they yield null results; but it does not in fact support this view.

The story is briefly as follows: In 1912, Stanford University, California, was offered the handsome endowment of £10,000 for the investigation of Psychical Research and cognate subjects. This was not lightly to be rejected, so, despite the then lack of respectability of the subject and manifest searchings of heart, the offer was accepted and Dr. Coover was appointed to undertake experimental work. In 1917 there appeared at last a large volume (15) of which the most conspicuous features were its bulk (pp. xxiv + 641) and the fact that it contained a larger proportion of irrelevant padding than any other work of an ostensibly scientific character than I have ever seen. The actual work reported amounted to no more than some 14,000 card-guessing, etc., trials, which would represent, I suppose, a small month's work by modern standards. The mountain was indeed in travail; but even the mouse was aborted.

It is quite clear that both Dr. Coover himself and the authorities concerned suffered from a strong resistance to accepting anything 'paranormal' as a fact in nature—they were not alone, of course, in that—and would have been appreciably distressed if a favourable conclusion had been forced upon them. It seems not unfair to say that Coover took very good care to ensure that it should not be.

In the first place, he decided that the only kind of evidence he would recognize at all should be that of the *difference* of success between trials in which the experimenter looked at the card or other test object and those in which he did not (thus denying in advance the possibility of ostensible 'clairvoyance'); in the second, he refused to accept anything short of 'certainty', which he arbitrarily defined as odds of 50,000 to 1 against chance.

His main experiment was with cards, using an ordinary pack from which the twelve court cards had been removed; it consisted of 100 subjects making 100 guesses each, of which half were with the experimenter looking at the selected card and half without his knowing what it was. There were also 1,000 trials (500 under each condition) made by various people who were supposed to have manifested or to be likely to possess 'psychic' powers of some sort.

No appreciable difference *between* the two conditions was found; but, if we pool all trials, irrespective of whether the experimenter looked at the card or not, we find a positive result with odds against chance of better than 200 to 1.

Coover, however, was not content with even a "not proven" verdict; he roundly declared that "... various statistical treatments of the data fail to reveal any cause beyond chance"—a statement which by all ordinary standards is flatly untrue—and "... no trace of an objective thought-transference is found ..."

Dr. Thouless, commenting on this work, (64) points out that, on

the assumption that the same rate of success was maintained, even Coover's own preposterous criterion of 50,000 to 1 against chance would have been reached if the number of trials had been approximately doubled; and observes, with charitable restraint, that "Coover's failure to go on is remarkable".

The point here is that evidence extracted against his will from an avowed sceptic, who has not even noticed that it was there, is in certain respects more compelling than the triumphant achievements of an enthusiast setting out to prove his case.

15. *Troland*. Much the same applies, in a slightly different way, to the work of Troland, (68) who did a small amount of experimenting under the Hodgson Memorial Fund and a gift by Mrs. J. W. Riddle, at Harvard in 1916-17. This is also sometimes quoted by hostile critics in the same way that Coover's work is, and with no better justification.

In Troland's technique, the experimenter was caused to peer into a form of darkened box, in which a single bright point was visible. The test object—to stretch the term a little—consisted in the appearance of an illuminated square either to the right or to the left of this according to the random dictates of an electrically driven switch; the subject was, of course, required to indicate whether it appeared to the right or to the left, and indicated this by pressing another switch of special design. Recording of data was automatic. Thus the possibilities of normal sensory perception and of scoring errors may be regarded as eliminated. It is again surprising that, having spent so much trouble on producing his apparatus, Troland should have used it so little. He only made 605 trials, of which two were abortive, and then abandoned the work, apparently satisfied that telepathy did not occur.

The gross scores, it is true, do not indicate any overt effect; for he only found 284 successes against an expected number of 301.5, which is a trifle on the wrong side. But he had divided the work into two sections, one with a 40-second period of illumination of the relevant square, the other with an 80-second exposure. The former showed a deficiency of successes amounting to 22 on an expectation of 177, which is a 'significant' result.¹

Troland, like Coover, ought to have gone on; but presumably it did not occur to him that it is just as difficult to keep guesses consistently *wrong*, in the absence of knowledge of what the test object is, as to keep them consistently right. And again, like Coover, he is rather in the position of poacher turned gamekeeper without even realizing it, so that errors attendant on excessive enthusiasm may equally be discounted.

16. *Groningen*. The experiments carried out at Groningen in 1920 by Heymans, Brugmans, and Wynberg (5 & 6) were of a very different

¹ I.e., odds better than 20 to 1 against chance.

type. They are of considerable importance historically, partly because of their unusual character and striking results, partly because they are widely considered on the Continent, and especially in Holland, to have 'proved' the occurrence of telepathy once and for all. This, of course, is a mistake. No single experiment or group of experiments, however carefully conducted and however successful, could properly be said to do this; for it would always be possible to invent *some* alternative explanation (e.g., in the last resort, conspiracy on the part of those performing them), and this is the course that future critics would be likely to take if such experiments were never repeated or extended. But the Groningen work was unquestionably very good, and added a weighty item to the general body of evidence. As there is no generally accessible account of them at first hand, I shall deal with them a little more fully than with others.

In these experiments a single subject (a young man called van Dam) was used throughout. He was always blindfolded and seated in a kind of three-sided box heavily screened by curtains from the rest of the room. In front of him was a rectangular board, measuring about 16 in. by 12 in., divided into 48 squares of about 2 in. side, arranged in six rows and eight columns. The columns were lettered from A to H, and the rows number from 1 to 6. His task was not to *guess* in the ordinary sense, but to indicate by pointing which of these squares had been selected by the experimenters. Selection was done by randomly drawing one of six numbered cards and one of eight lettered cards from their respective packets, which were, of course, shuffled before each trial. Thus, if the cards drawn were marked G and 4, the experimenter would 'will' the subject to indicate square G4 in row 4 and column G.

In the rather small total of 187 trials no fewer than 60 successful indications were obtained, which gives 'astronomical' odds against chance.

About half these trials were conducted with the experimenters in the same room as the subject and about half with them in a room immediately above him. In this case observation was made through a doubly glazed hole cut in the floor. These 'separate-room' trials were slightly more successful than the others.

From the critical point of view there are three objections to this technique. In the first place, it would have been better if there had been independent observation and recording of the cards selected by the experimenters and of the square indicated by the subject, instead of the direct observation used; this would have eliminated the possibility of the experimenter unwittingly misreading the square to accord with the selection. But the experimenters, of whom two at least (I understand) were always present, were extremely competent psychologists, presumably well alive to this kind of possibility,

so that the probability of errors of the sort having appreciably affected the outcome may fairly be considered negligible.

Secondly, there is the question of 'preference and bias'. It is very unlikely that a subject under these conditions would, if there were no telepathic or like influence, indicate all the squares on the board with equal frequency; he would naturally tend to favour those within easiest reach of his hand, or, if he were aware of this tendency, perhaps conscientiously to avoid them. And experience shows that it is almost equally unlikely that supposedly random drawings of cards under these conditions would give equal frequencies for each of the six or eight varieties. If the 'preference' of the subject in the matter of squares happened to coincide with the 'bias' of the card drawings, the number of successes would be spuriously inflated; and, of course, vice versa.

Thirdly, there is the possibility of the experimenters having themselves influenced the results by unwittingly giving some sort of 'Stop!' signal whenever, by chance alone, the subject's hand happened to stray to the selected square. The subject is 'feeling about' at random, the experimenter is interestedly watching him; the subject's hand approaches the selected square, the experimenter's interest heightens, probably he breathes more quickly or leans forward in his chair; the hand passes on to the square, the experimenter gives perhaps a little gasp of satisfaction, or relaxes his muscles and the chair creaks; the subject subconsciously notes this, thinks 'That's it', and stops his hand. Result, a success.

I mention these points largely because they so well illustrate the kind of pitfall which is common in this class of work, and must always be borne in mind in planning, conducting, or considering such experiments, not because I think they actually affected this particular research.

As it happens, I was able to pay a special visit to Groningen in 1937, and to examine carefully both the original records of the experiments and the rooms in which they had been conducted. I am very much indebted to Professor Brugmans for his great courtesy in this connexion.

I found, as I had expected, that neither the subject's 'guesses' nor the experimenters' drawings of cards were free from bias; but calculation showed that these factors did not appreciably affect the outcome. Also, the floor between the two rooms was of such solid construction that no ordinary movement, change of breathing, or the like, could possibly have acted as a 'Stop signal' unless we assume a quite extraordinary degree of hyper-sensitivity on the part of the subject, which there seems no justification for doing.

But I think the most convincing part of the evidence is, as so often, indirect. In 29 trials, the subject was given a dose of alcohol before the session began, and in 24 a dose of bromide. Under

bromide he did significantly better than with nothing at all, and with alcohol significantly better than with bromide. It seems quite incredible that these results, which accord well with the finding of later experimenters, should be due to either of the alternative causes suggested.

17. *Estabrooks*. A series of experiments was carried out at Harvard in 1925-6 by Dr. L. H. Estabrooks (17)¹ working with college students guessing ordinary playing cards. For our purpose these experiments may be divided into two groups. In the first, experimenters and subjects were in the two halves of a double room separated by double closed doors, and an electrical signalling device was used to tell the subject when to make a guess. Under these conditions, 83 sets of 20 guesses each were made, and the results were overwhelmingly positive; for of the 1,660 guesses, 938 were correct as to colour instead of the 830 expected on a chance only hypothesis, and this means anti-chance odds of some ten million to one. In the second group, which is more interesting in certain respects, experimenters and subjects were in entirely different rooms about 60 feet apart. Under these conditions, omitting details, significantly *below chance* scores were obtained. For example, 32 sets of 20 guesses were made, a total of 640 guesses, and the subjects only scored 130 successes as to *suit* instead of the 160 to be expected, and the odds against this result being due to chance alone are about 100 to 1. Much the same kind of decline in scoring in the course of the experiment was found here as has already been mentioned in connexion with Usher and Burt and with Troland.

The experiments were discontinued at this point, partly because of the difficulty of inducing subjects to continue them, and partly I think because Dr. Estabrooks did not fully realize that below-chance scores are just as interesting, and just as indicative of some peculiar factor at work, as are above-chance scores; indeed, they may be of even higher evidential value, because it is so unlikely that, e.g., unwittingly given or gathered clues should work in the wrong direction.

But the work remains as one of the best examples of plain experimentation in the relatively early phase of the subject.

18. *Jephson*. Perhaps the most elegant series of experiments ever performed was that carried out by Miss Jephson (30) from 1924 onwards. She used playing cards, scoring the results by Fisher's methods, which take due account of partial successes (18 and 19) and collected her data mainly by correspondence.

The instructions issued to her subjects were substantially as follows: Take an ordinary pack of 52 playing cards (shuffled); draw one card face downwards from the pack, and try to guess what it is; record your guess; turn the card face up, and record what it actually

¹ Some account is also given by Jephson (30).

was; return it to the pack and shuffle; repeat the process four times, thus making five guesses; if possible do all this five times at intervals of, preferably, not less than a day, to obtain a total of twenty-five guesses.

Two hundred and forty subjects completed the course, yielding a total of 6,000 guesses, made up of 1,200 each of first, second, third, etc., guesses. When these guesses were duly scored it was found, first, that the overall average score was very significantly above chance, while the rate of scoring dropped markedly from the first guess to the second, third, and fourth, rising again to very nearly the initial value at the fifth.

The weak point of this work was, of course, that it depended almost entirely on the good faith and intelligence of the subjects. They might, in principle at least, have allowed themselves to be guided by small marks on the backs of the presumably familiar cards; or they might have been so depraved as not to start recording until preliminary trials had resulted in a correct guess or 'near miss'. I do not suppose that this actually occurred in any appreciable degree, and I think the internal evidence is against it; but it could not be completely excluded from possibility under the conditions of the experiment, and the work has consequently received a good deal less attention than, in my opinion, it deserves.

Fortunately, however, a certain number of the trials were witnessed, and Miss Jephson gives separate figures for some of these (*loc. cit.*, p. 237). These show a significant total score and a significant decline effect, so we need not have much hesitation about accepting the general indications of the work as a whole.

19. *Short Discussion of Early Experiments.* I do not know what effect will have been produced on the reader's mind by this handful of samples, except perhaps that he is likely to have found them a trifle tedious or bewildering according to temperament. But I am inclined to think that the proper reaction would be mainly to deplore their disconnectedness. Evidently quite a number of competent people—and there are many others whom I have not mentioned—have set out at one time or another to investigate Telepathy by more or less ingenious and potentially satisfactory experimental methods; but, having reached a certain point, they have stopped, either because—as has been natural enough in many cases—they have had other and more urgent claims on their time, or because, as in certain cases, they had decided against Telepathy in advance and contrived to find excuses for not continuing the work for which they were drawing funds.

The whole impression to my mind is one of a kind of guerrilla warfare, with outbreaks of fighting here and there, and fires separately kindled which flare up and flicker and die out for lack of fuel. There is little effect of a close-knit and co-ordinated campaign with each

part supporting the other, and little suggestion of an intelligible pattern emerging from chaos.

None the less, much as with the spontaneous phenomena, the more closely we study these various isolated efforts, the more difficult it becomes to avoid the conclusion that some influence is at work which chance coincidence cannot cover and is beyond the range of existing physical concepts. The form in which this manifests is, of course, much less spectacular under experimental than under spontaneous conditions. It is much less exciting correctly to guess ten playing cards in a pack than to experience a veridical hallucination; but, since each is equally concerned with the acquisition of information in an unaccountable manner, it seems reasonable to suppose that there is some sort of connexion between the two processes, so that an extensive study of the one may not improbably lead us to an understanding of the other, while either opens up unexplored properties of the human mind for examination.

But it is fairly clear also that, before we can hope for great progress, we shall have to employ some much more powerful technique than has hitherto been devised, or else to work on a much larger scale and for a much longer time than has been done in any of the cases discussed above.

CHAPTER III

EXPERIMENTAL WORK (*continued*): RECENT RESEARCHES

20. *The Work of Dr. J. B. Rhine.* The modern phase of experimental work—which will doubtless be regarded as archaic enough in its turn by future generations—may be regarded as beginning with the publication in March 1934 of Dr. J. B. Rhine's book, *Extra-Sensory Perception*. (47) This is not to say that no early-type work has been done since then, or no late-type work before it; indeed, the book itself reported investigations which had been going on since the autumn of 1930. Nor would it be correct to suggest that all the sceptics immediately fell down and worshipped, confessing their error and hastening to recant; on the contrary, it was more in the nature of a signal for the outburst of a storm of controversial discussion and criticism, which has not even yet altogether died away. But it was a very important landmark in the subject and forms a convenient dividing line between relatively ancient and modern work. Since then, at any rate, work has been far less sporadic and disjointed than previously. Experiments or their analysis are now going on more or less continuously, and at many different hands; indeed, Dr. Thouless (65, p. 14)¹ estimates that "already there are probably more independent workers on the psi" (i.e., these) "phenomena than on any other psychological topic". And although each pursues to a great extent his own course, there is a considerable and increasing degree of co-operation and interchange of views. In short, the subject is rapidly beginning to take on the similitude of any ordinary branch of scientific inquiry.

Practically all the work of Rhine and his school has been done with a special sort of cards known as Zener cards. These are of ordinary playing-card size and shape, but there are only five different symbols, viz., Circle, Star, Cross (or Plus), Square (or Rectangle), and Wavy Lines ('Waves'). These symbols are usually printed in black on a white ground, though coloured symbols have occasionally been used. The width of the black printing varies from about 7 mm. for the Cross down to about 2 mm. for the Waves. Five examples of each sort of card, making twenty-five in all, constitute a pack, and a 'run', as it is called, through such a pack, i.e., a series of twenty-five guesses, is the standard working unit, so to say, in this type of experiment. If chance alone is operative, a subject may be expected on the average to score five 'hits' per run, and the probability of his

¹ The whole of this paper, which is a review of the general situation in a Presidential Address to the Society for Psychical Research, is strongly commended to the reader.

scoring any observed excess over this average (or deficiency below it) may easily be calculated by quite ordinary methods.

With this very simple equipment, Rhine tested (I am speaking of the work reported in his first book) eight major and a number of minor subjects, with positive results as to the apparent significance of which there could be no doubt at all. Several different techniques, of which I shall say more below, were used.

Now my own opinion is that by no means the least (though I would not say the greatest) of the many and valuable services which he has rendered to the subject is that of having so extensively drawn the fire of the critics, who have not scrupled to attack his work on almost every imaginable ground, in addition to some which only their perverted ingenuity could have invented for the purpose. Some of the nonsense they have written has to be read to be believed, and even then is almost incredible. It is accordingly worth while to consider in very broad outline the types of criticism which can in principle legitimately be brought against this class of work, or rather the types of error to which it is in principle liable.

These divide naturally into two groups, namely, errors connected with the collection of the data, and errors connected with their assessment.

In any card-guessing or similar experiment, the subject is required to name, or otherwise identify, a card or other test object which he cannot see (or feel, hear, touch, taste, etc.), and of which he cannot infer the nature by any rational means. If he can, or if he can even get a clue to its nature, then the experiment is invalid—unless, of course, we have sufficiently precise knowledge of the extent of his information to make appropriate allowance for it.

For example: If, working with ordinary playing cards, a subject could not see what the card actually was, but could glimpse a sufficient reflection from a shiny table-top to tell him whether it was red or black, he would double his chances of success; though we could correct for this easily enough if we knew what was happening. Or if we told him the name of each card after he had guessed it, he would only have to remember what was 'out' to raise his chance of success progressively from one in fifty-two for the first guess to certainty for the last.

When he has made his guesses, we count the number of successes, compare it with the number to be expected on the chance-only hypothesis, and calculate the probability that the difference is due to chance alone. If we miscount, or miscalculate, or allow ourselves to assume anything which the facts do not warrant, the experiment is again liable to be invalidated.

Most of the critics elected to attack on the statistical (i.e., probability-calculation) flank, and it is here that the heaviest fighting has taken place. Their decision was extremely injudicious, for but few

of them, and those not the most vociferous, seemed to have any understanding of the subject; and it had been obvious from the start that, whatever else might be responsible for Rhine's results, it almost certainly was not chance, nor any plausibly postulable degree of miscounting, preferential selection of data, losing of records, or the like. Critics on these lines are now, for the most part, back where they started from, licking their wounds and (we may hope) repenting of their rashness; and the main position rests as stated by Professor Camp, President of the Institute of Mathematical Statistics, in 1937: "If the Rhine investigation is to be fairly attacked it must be on other than mathematical grounds."

This is not to say that mathematical treatment of the data is invariably simple and foolproof, or that Rhine has never lapsed into error. On the contrary, few subjects are more full of pitfalls for the unwary than is statistics the moment one ventures beyond the very simplest applications—as who should know better than I, who have fallen into so many of them? And it is likely enough that here and there, in relatively minor and recondite matters, Rhine, like most other people, has made a mistake or two. May he live to make plenty more! But as regards the broad and basic issue of whether the phenomena occur at all, there can be no two sane opinions about it.

On what I may term the operational side, as it happened, Rhine's early work was very much more open to criticism than on the mathematical, though few of those who sought to discredit his results knew enough about the subject to take advantage of it. There is no doubt that, as a matter of historical fact, the early experiments were not reported in sufficient detail to enable one to judge whether the possibilities of sensory 'leakage' (i.e., acquisition of information or clues by normal means) had been adequately considered and properly excluded. I myself very much doubt whether leakage of this kind ever did occur in any serious degree; but so long as occurrence of the phenomena was seriously in doubt, critics were perfectly correct in demanding a more detailed description of experimental conditions than would be required of a man reporting only minor variations on well-known facts obtained by standardized procedures. As a particular point: There is no doubt, as several critics have remarked, that Rhine's cards can be read from the back, *in certain lights*, with a fair degree of assurance; this is because the process of manufacture causes the cards to shrink slightly where the printing ink is applied, so that the inked portions of the surface reflect light a trifle differently from the other portions. I doubt whether any one could handle the cards for long without noticing this; and, once noticed, it is the easiest matter in the world to arrange the experiment so that the subject cannot see the cards from the required angle with respect to the light—or, more simply, cannot see the cards.

Rhine and his associates were quick to realize the need for dealing

with such points as this, and various others which were suggested from time to time, and they have devised a great variety of experimental techniques designed, by the use of suitable screens or otherwise, to eliminate all such sources of error. For example: In one of the earliest and commonest procedures, the subject guesses all twenty-five cards of the pack "down through", from top to bottom, before any are removed for scoring hits. Or in another, known as Screened Touch Matching, the subject, screened from sight of the cards, indicates to the experimenter, by pointing, into which of five compartments or the like—one for each symbol—the successive cards of the pack are to be placed.

Various other refinements have been introduced from time to time to meet all reasonable—not to mention many unreasonable—objections of critics; probably this process of refinement culminated in the rigorously controlled Pratt-Woodruff experiments of 1938-9 (42 and discussed in 49), which should be studied by any one who doubts the rigidity of method employed at Duke.¹

Accounts of the work done by Rhine and his immediate associates, and by many others who have taken up investigation on the same lines, will be found in a long series of papers in the *Journal of Parapsychology*. A great deal of this is summarized and a wide range of criticisms is dealt with in *Extra-Sensory Perception after Sixty Years*. (49) Although there are doubtless points open to legitimate criticism, and even actual errors, to be found here and there, I am confident that any attempt to shake the work as a whole in its main features is doomed to ignominious failure.

It is very difficult fairly to assess the value of Rhine's contribution to the subject, beyond saying that it is immense. No other man, I suppose, has done anything like so much to put these phenomena 'on the map', at least as a matter for discussion—which is a necessary stage on the road to general acceptance. I do not think that Rhine himself would claim to have made any very startling new discoveries (though even this is an opinion which may have to be revised before long); but the work is characterized by a massiveness, a continuity, and a variety (within the framework of Zener card-guessing), which is certainly not to be found elsewhere. I do not know how many trials Rhine and his associates have now observed, or how many subjects they have examined, but the first must by now run well into the millions² and the second into hundreds. The work has been substantially continuous for more than a dozen years, in the course

¹ Dr. Rhine is now Professor of Psychology at Duke University, Durham, North Carolina, U.S.A., and has a whole Department devoted to Parapsychology, as this branch of Psychology is now often called.

² Especially worthy of honourable mention is Greenwood's prodigious performance (20) of scoring no fewer than 500,000 'dummy' guesses, in order to determine empirically whether the usual mathematical formulae are in fact applicable to this class of data.

of which it has been subjected to every kind of criticism, fair and otherwise, and (very importantly) has been continuously adjusted to meet it. As regards variety: Rhine and his colleagues have tested men and women, children, the blind, and mental defectives; he has worked over long distances and over short; he has used symbols of varying sizes and shapes and colours; as already noted, he has devised and used a great number of different methods; he has worked under conditions in which the experimenter knew the card to be guessed, and under others in which he did not (apparent clairvoyance); and with arrangements in which the random selection of the card took place only after the subject had made his guess (apparent precognition or 'foreknowledge'). Perhaps his most important finding, indeed, apart from the bare fact of the phenomena occurring at all, is that these variations make so surprisingly little difference.

To sum up: No one who has not studied Rhine's work with considerable care, and particularly the way in which various criticisms have been met, is entitled to speak with authority on the present status of the phenomena.

21. *The Work of G. N. M. Tyrrell.* Mr. Tyrrell occupies a unique position in the subject, because he is, so far as I am aware, the only man to have devised, and extensively used over a number of years, a mechanical apparatus for selecting the test object and for recording successes. Unfortunately, the exigencies of war-time (powerfully represented, I understand, by a bomb in the attic)¹ have temporarily suspended operations; but no account of modern work would be complete without some mention of his.

The scheme finally adopted arose out of his noticing that a friend, Miss J., who had shown various signs of paranormal abilities and later became his principal subject, had a particular aptitude for finding lost objects and a definite subjective satisfaction in doing so. Mr. Tyrrell very wisely determined to attempt to enlist this natural aptitude as a factor in experimental work. It occurred to him that, if he could create a situation of, as it were, artificial 'finding' under controlled conditions, he would be likely to obtain much better results than if he attempted to force the subject into an unwelcome groove. This is a line of approach which might very advantageously be adopted by other workers, if they are fortunate enough to come across people with apparent natural aptitudes.

The first and simplest apparatus consisted of five small boxes, provided with hinged lids and mounted behind a board in such a way that a pointer could be thrust by the experimenter through holes in the board into any selected box, without the subject being able to see what he was doing. The subject was required to open,

¹ Possibly this was a blessing in disguise, at least for students of our subject. Without it we might not have had his very valuable and interesting paper on *Apparitions*. (72)

by raising the lid, the box in which she thought the pointer had been thrust; and the antecedent probability of her doing so correctly under chance-only conditions was, of course, one in five. Thus both the element of 'finding', to suit the natural aptitude, and the necessary basis for assessing the degree of success achieved, were provided.

Results of high significance were readily obtained with this arrangement, and it is interesting to note that other subjects beside Miss J. also scored significantly, though not nearly so highly.

The apparatus, however, was soon greatly elaborated and improved. The five boxes were retained, but instead of using a pointer, each box was fitted with a small electric lamp, which lighted up when the appropriate key was pressed by the experimenter; and the number of trials and successes was automatically recorded on a paper tape, thus providing a completely objective record of the work, and obviating all risk of unwitting mis-scoring of successes. Significant results were easily obtained with this arrangement also.

Numerous refinements were introduced from time to time, in the light of various criticisms and suggestions; and, although it is almost as invidious to praise one's friends as to abuse them, I think it only fair to say that there can seldom have been a worker in this field so ready as Mr. Tyrrell to adapt his methods to meet every remotely plausible criticism. Of these refinements the most interesting were: the introduction of a special sort of switch, which crossed the wires from the keys to the lamps in such a way that, although the operator knew which key he was pressing, he did not know which lamp he was lighting; operation of the keys in accordance with tables of numbers previously selected by random methods, to eliminate possibly helpful 'number habits' on the part of the experimenter; a mechanical selector which does the same thing automatically; most interesting of all, perhaps, the use of a 'delayed action relay', so arranged that no lamp could light up until *after* the subject had raised the lid of the box, though the circuit determining which lamp should light if the lid of its box were raised had been determined by the apparatus. Thus, using this device, the event which the subject is required to guess is not there to be 'clairvoyanced', so to speak, until after she has made her guess; and, if the special switch is also used, the experimenter does not know the 'setting' of the apparatus, so that this cannot be 'telepathed'; and it also eliminates all possibility of her picking up clues from, e.g., differential clicking of relays used in the apparatus, because the relays have not yet clicked.

I am not sure that this is not the most rigorous test of its kind ever attempted; but despite everything significant results were obtained at a rate of scoring negligibly below that usually achieved. For details the interested reader should consult Mr. Tyrrell's paper

in S.P.R. *Proceedings*, (70) or his account of the apparatus in the *Journal of Parapsychology*. (71)

Mr. Tyrrell has occasionally been criticized in the past (by myself among others) for concentrating so heavily on a single subject. I think the criticism would be reasonable if the work in question were the sole, or virtually sole, evidence in favour of the phenomena generally; because the sceptic could much more plausibly suggest the possibility of collusive hoaxing than if many independent subjects were concerned.¹ But this is not at all the case, for the work, though valuable and important, is only a part of a very much larger whole. In these circumstances, it would be unnatural for a man discovering a nugget of gold in his front garden to attempt the extraction of the metal from sea-water as a preliminary to studying its properties. None the less, I should like to see the work extended to the testing of a number of other subjects, with a view to ascertaining, if possible, how big a part the specific element of 'finding' plays, and to what extent this is peculiar to Miss J., or to what extent distributed among others.

22. *The Work of Dr. Hettinger.* Dr. Hettinger enjoys the distinction of being (I believe) the first man in this country to receive a Ph.D. degree for a thesis concerned with paranormal phenomena. It is a remarkable indication of his thoroughness and enthusiasm that he began as far back as 1933 by attending courses in psychology at King's College, London, in order to fit himself for his investigations, although at that time he was well beyond the usual undergraduate age, and occupied an established professional position as a patent attorney.

His work (23, 24) has been concentrated on that curious and little studied phenomenon commonly, but most unfortunately, known as 'psychometry', for which 'object-reading' would be a preferable if not an ideal name. In this, the subject or 'sensitive' is given some object or other, 'concentrates' on it, and describes such impressions relating to it or to its owner as he or she may receive. Many cases are to be found in the literature of the subject, in which it is claimed that these impressions correspond with the facts to an extent which cannot be accounted for by the operation of chance, of intelligent guesswork, or of the normally acquired knowledge of the sensitive.²

To Dr. Hettinger, however, goes the credit of being the first to devise methods whereby the strong impressions of 'beyond-chance-ness' could be subjected to reasonably exact assessment. Most of his first book (23) is devoted to an account of the gradual development of these methods, from early attempts which he soon recognized as

¹ In the actual circumstances, notably in view of the objective tape-records, etc., any such supposition would be extremely difficult to maintain, quite apart from considerations of character.

² See particularly here Dr. Franklin Prince's account (46) of Pagenstecher's observations.

unsatisfactory to those finally adopted which leave, in my judgment, no worth-while doubt at all as to the 'paranormal' character of the knowledge displayed.

He then had the really brilliant idea of causing the owners of the objects presented to the sensitive to read suitable periodicals, notably illustrated papers, at the same time that the impressions were being recorded, in the hope that the sensitive might 'pick up', so to say, the content of the illustrations, etc., or the images, etc., brought by them to the reader's mind. So far as can be judged by inspection of the examples given in his second book, this plan succeeded to admiration, though Dr. Hettinger has not yet (unfortunately, in my opinion) subjected this aspect of the work to statistical assessment, so that the evidence, though very striking in many cases, remains of a qualitative type. But the effect described fits in extremely well with what we should expect on theoretical grounds, as we shall see later; I accordingly see no reason for seriously questioning it, while the work described in the first book constitutes a notable contribution to the subject.

23. *The Writer's Experiments with Drawings: (1) General.* I must be forgiven if I devote considerably more space to describing my own experiments than I have given to the work of others. There are two reasons for this apart from my natural predilections in favour of my own progeny.

The first is that, although many experimenters from the earliest days have used simple drawings or diagrams (usually the latter) as test material, no one (to the best of my knowledge) has done so on anything like so large a scale (I have about 20,000 drawings in my files, I suppose, of which about half have been catalogued); and hitherto there has been no really satisfactory way of assessing the results obtained, of determining whether they could plausibly be attributed to chance, or of comparing results obtained under different conditions, etc., in such a way as to constitute a useful instrument of research.¹

The second reason is that, although I had been tolerably familiar with the principal experimental researches in the subject for some five-and-twenty years, it was only through the study of the results obtained with drawings that some notion of the kind of thing that

¹ I ought to make it clear that I myself can claim no credit for the devising of these methods. My own mathematical abilities are so small as to be virtually negligible, so that I am dependent on others to provide me with tools to use. The method of *testing* mentioned on page 32 was suggested to me by Mr. W. L. Stevens, who had evolved it (63) for use in a slightly different context; the method of *scoring* which I have found so valuable is an adaptation of that proposed by Professor Fisher (18) for dealing with partial successes in card guessing, and modified by Saltmarsh and Soal, (56) and used by Pratt (41) for estimating the value of 'medium-istic' utterances. It is a pleasure to acknowledge here yet another indebtedness to Professor Fisher and Mr. Stevens, neither of whom, however, must be held responsible for the use I have made of their methods.

was going on began to form in my mind. This crystallized, in due course, into the theory developed in Part II, which is the crucial part of this book; so it seems reasonable to deal in greater detail with the experiments which actually gave rise to it than to those which, however important intrinsically, only support it or afford scope for its application.

As a matter of fact, it was largely chance that decided me to use drawings instead of cards. My experiments started early in 1939, and at that time, at any rate in my own circle, discussion of this subject was concerned mainly with the question of whether Rhine's results could plausibly be explained by the 'leakage' of sensory clues and the like. I made up my mind to try out a series of experiments such that, whatever else their faults might be, the possibility of 'leakage' should be definitely excluded.

My original intention was to place a shuffled pack of Zener cards (or perhaps several packs) every evening in some predetermined position in my study; to ask as many people as I could induce to co-operate to guess these in order from top to bottom (i.e., "down through", as Rhine calls it), working wherever they might happen to be at the time; and to go on doing this until either a significant positive result emerged, or we all gave up in despair. This would at least have eliminated 'leakage', though I am not at all sure whether we should have obtained the positive result—probably not, since card-guessing ability seems for some unexplained reason to be much rarer in this country than in America.

But just when I was getting ready to organize the experiment, I happened to see some drawings which had been produced in the course of certain minor experiments which Mr. C. V. Herbert, of the Society for Psychical Research, and a group of members, had been conducting with a similar group headed by M. Tanagras in Athens. One or two points about these struck me as interesting; and it so happened, also, that I had recently been re-reading Mr. Upton Sinclair's book, *Mental Radio*. (57) This is a most interesting and delightful book—quite the most alluring introduction to the subject that I know—and makes, at least by suggestion, contributions of real value to our understanding. If Mr. Sinclair had been able to formalize his experiments to some extent, particularly if he had been able to assess them, it would have ranked as a major piece of research; even as it is I am not at all sure that I ought not to have given it more notice than I am doing here.

These circumstances, combined with the fact that I happened to remember the method of Matching, sometimes used in psychological research work, made me change my mind and decide to use drawings instead of cards; but the other feature, of taking steps absolutely to exclude all possibility of 'leakage', was, of course, retained.

Omitting details, for which my first paper on the subject(11)

should be consulted, the procedure was as follows: On each of ten successive evenings, a simple outline drawing, in black ink on white paper, occupying about two-thirds of a foolscap sheet, was pinned up in my study at 7.0 p.m. and left in position till 9.30 a.m. the next morning. The object to be depicted was decided by taking random numbers from suitable tables, opening a dictionary at the page so indicated, and taking the first reasonably drawable word encountered. This method of selection is not ideal, but it ensures the necessary randomness, which is all that matters here.

Subjects were instructed to attempt to 'reproduce' these drawings, or to draw what they thought they represented, at any time convenient to themselves between the hours mentioned. Adequate precautions were, of course, taken to make sure that no one even remotely connected with the experiment entered the room while the 'originals' (i.e., my drawings) were exposed, and that these were securely locked away after use. A series of ten such trials (i.e., ten originals and ten attempts at reproduction by each subject) constituted an experiment.

This was the standard procedure used in all the experiments mentioned here, with negligible variations,¹ except in the second. In this I worked with a group of subjects in the Psychological Laboratory, Cambridge. They and I, both invigilated, were in rooms two floors apart, and sensory leakage, etc., was as completely excluded as by the normal procedure. On this occasion all ten trials were done in the course of an hour or so.

24. *The Writer's Experiment, continued: (2) Assessment; The Matching Method.* Now for the matter of assessment. Apart from an importantly encouraging flash-in-the-pan success on the very first experiment, the Matching method did not work—by which I mean that although the drawings looked very promising by inspection, the method did not indicate that anything but chance was operative. The reason why it failed to do so, while a different method of assessment succeeded, is so important that I must ask the reader to bear with a few paragraphs of explanation.

I will try to explain briefly, with the aid of an illustration, how the Matching method is worked. Take ten consecutive cards from a pack, say the ace to ten of clubs, and lay them out in a row in any order you like; then take, say, the ace to ten of diamonds, shuffle them, and lay them out face downwards beneath the first row; turn them face up. If you do this often enough, you will find that on the average you will get *one* coincidence of value, such as the five of diamonds below the five of clubs, or the three below the three, etc.,

¹ In the sixth experiment, the originals, which had been previously prepared by a third party, were each put up twice—once enclosed in an opaque envelope, and a second time 'naked'. In the seventh, each of five collaborators or sub-experimenters went through the normal procedure as regards 'exposure' of the original, but each of course in a room of his own. Cf. my second paper. (12)

in each such trial; and it is easy enough both to show that this is to be expected on theory and to calculate the probability of obtaining any larger number of coincidences by chance alone. This is the illustration, and exactly the same principle applies to the originals and drawings.

Lay out the ten originals of any experiment, in any order such as that of their use, and arrange for some one to give you the ten drawings made by any subject, before you have seen them in their true order, and so shuffled that you do not know which was drawn on which occasion. Arrange these according to any plan you like opposite the ten originals; in particular, *match* them, that is to say, place each opposite that original which you think it most closely resembles. Then, if there is no more than a chance connexion between what was *used as an original* on any occasion, and what the subject *drew* on that occasion, you will expect to get, on the average, *one*, but no more than one, coincidence of date for each subject whose drawings you thus deal with; that is to say, you will on the average place one drawing, but not more, opposite the original at which it was, so to say, 'aimed'. But if there is any factor at work (whether telepathy, etc., or otherwise) such that a subject is more likely to draw any object when—i.e., on the same occasion as—that object is drawn by the experimenter and used as an original (or, of course, to draw something recognizably similar), then this will aid you in your matching, and you will, on the average, get somewhat more than one coincidence per set of drawings.

The important words here are "on the same occasion as". If the subject merely tends to draw the same object as the experimenter on *some* occasion within the period of the experiment, but not necessarily the *same* occasion—e.g., if he were to do so on the following occasion, this would not help you in your matching, no matter how strong the tendency might be.

Now, in my first experiment, one of the originals was a Hand and another was a Buffalo; in my second, one original was a Spinning Top and another was an illustration of the word 'Shooting' (a drawing of a sporting-gun going off). The thirty-seven subjects of my first experiment produced no fewer than *eight* hands between them (which I thought remarkable, so far as I could judge on common-sense grounds) and *seven* assorted Cows, etc. (which were obviously good enough matches to Buffalo). And the twenty subjects of the second experiment produced *two* Spinning Tops and *four* assorted Guns. But the first experiment yielded *no* Tops and *no* Guns of any kind; and the second experiment only one Hand (and that was a Glove!) and *two* Cows. And there was the same sort of tendency in lesser degree among the other originals in the two experiments.

25. *The Writer's Experiments, continued: (3) Displacement and*

Precognition. Contemplating these facts, light began to dawn, and I realized that the Matching test involved and depended on the natural, but naïve, assumption that telepathy must be a 'now or never' affair; that is to say, that if it worked at all it must do so on the particular occasion on which the experimenter produces the original, and not on others, or only during the period of 'display' of the original; and equivalently, one must suppose, in other types of experiment. If this is not true, and if telepathy does not happen to conform to our naïve expectations but works according to some plan of its own, then the Matching method would very likely not demonstrate it. What mattered, I now realized, was *not* whether a subject drew an object 'X' on the same *occasion* as the experimenter drew the object X, but whether the subjects' drawings of any experiment, *taken together*, registered relatively more hits (regardless of the occasion of their occurrence) on the originals used in that experiment, taken together, than they did on the originals used in other experiments, and vice versa. To put it another way, it became clear to me that a 'hit' might be *displaced* to some extent from what one would commonly regard as its natural position in the series of trials.

I regard the realization of this fact as the turning-point of the whole investigation. If I had not recognized it, and resolutely refused to be intimidated by its implications, I might well have struggled on indefinitely, wondering why experiments which looked, in a way, so promising, should fail to give positive results.

The awkward part about it, of course, was that the displacements were not by any means always in the same direction; on the contrary, subjects seemed just about as likely to draw an object somewhat *before* the original was displayed as to draw it *after*. The latter would be comprehensible enough, in terms of 'lag', or 'latency', or 'deferred emergence', or something of the kind; but to score hits, otherwise than by chance, *before* the event implied something in the nature of *precognition* or foreknowledge, which most people would find even more difficult to swallow than telepathy, etc.

However, there it was, and it is no use kicking against the pricks of fact. Fortunately, the precognitive effect has now been confirmed up to the hilt by Soal and Goldney, (60 and 61) in what is probably the most rigid and invulnerable series of researches ever conducted in this whole subject. Rhine, too, (48)¹ has found good evidence of precognition; and there is a considerable bulk of non-experimental evidence of good quality bearing on the subject, as discussed, for example by Saltmarsh. (54)

I hope the reader will not do me the discredit of imagining that I am begging the whole question by saying that hits on the right

¹ I ought to say that I do not agree with Rhine's method of treating his data here but a more rigid test leaves little doubt as to the reality of the effect observed.

occasion are telepathic, that hits which come too early are pre-cognitive, and that hits which come too late are deferred. That would be a deplorable lapse from logical thinking. The situation is this. If there were no telepathy or other 'paranormal' factor at work, then the proportion of drawings of any particular sort of object, i.e., the proportion of ostensible hits on any original, would be more or less constant with respect to time, and subject only to chance fluctuations of an unsystematic nature. If telepathy, etc., were a 'now or never' affair, as has hitherto been tacitly taken for granted, the proportion of ostensible hits would fluctuate in a chance-like way about some constant value until the occasion of display of the original, then shoot suddenly up, and immediately drop again and continue on its chance-fluctuating way. If there were only 'now or deferred' telepathy, it would go as just described up to the occasion of display, then shoot up, and decline gradually towards its original value, though it would probably never quite come down to this. What actually happens is that the proportion of ostensible hits gradually rises as the occasion of display approaches, so to say, reaches a maximum peak at or about that occasion, and then gradually declines again, the whole progress being overlaid, as it were, with chance fluctuations in the way one would expect on general grounds.

26. *The Writer's Experiments, continued: (4) Assessment: Stevens's Method.* Turning back to the question of assessment, it is now clear enough what we have to do. We must inquire whether the subjects of, say, the first experiment score relatively more hits on the originals of the first experiment, taken together, than they do on those of the second, third, fourth, etc., experiments; whether the subjects of the second experiment score relatively more hits on the originals of the second experiment than on those of the first, third, etc., experiments; and so on. This is done easily enough by simply making a list of the hits scored by all the subjects of the various experiments on all the originals of the various experiments; we tabulate these, and apply a not very difficult method due to Stevens (63) to calculate the probability that any observed excess of hits by the subjects on the originals of their *own* experiments, over the expected value, is due to chance.

A word about the 'expected value', because this is the core of the whole matter. In dealing with, say, playing cards, we have what is known as an *a priori* or antecedent probability to work with; that is to say, we know, or have good reason to believe, that under pure-chance conditions a subject has one chance in fifty-two of guessing a card correctly, so that if he guesses through a whole pack he may be expected to get one guess right, and if he guesses through twenty packs we may expect that he will get about twenty guesses right. But in dealing with drawings we have no such antecedent probabilities to guide us; we cannot possibly say before we start that the

probability of a subject drawing a Dog under pure-chance conditions is, say, one in twenty-three, or any other value, and that therefore a group of a hundred subjects may be expected to draw on the average a trifle more than four dogs. All we can do—and it is, of course, quite sufficient—is to count how many dogs are in fact drawn by a known number of subjects (doing a standard number of drawings each, e.g., ten) when Dog is *not* used as an original, and calculate from this, by an ordinary ‘rule of three’ process, how many we should expect from whatever other number of subjects may be working in an experiment in which Dog *is* used as an original, on the assumption that the original makes no difference. If we find that they actually draw more than this expected number, we may begin to suspect that the use of the original *does* make a difference, which is what we want to know.

For example, I said that the thirty-seven subjects of my first experiment drew eight Hands between them—Hand being one of the originals in that experiment. Is this more than we should expect? Now in experiments in which Hand was *not* used as an original a total of 491 subjects drew a total of nineteen Hands; and it is a matter of simple rule of three to determine that, at this rate, i.e., if the use of the original made no difference, thirty-seven subjects ought to draw a trifle less than one and a half hands—say more than one but less than two. Eight Hands evidently represents a gross excess over this; actually, it is about a hundred to one against such an excess occurring by chance alone, but this is a ‘high light’, so to say, and we must naturally take other less successful originals into account. In the method just mentioned, we perform this sort of calculation for all the subjects, and all the originals, of all the experiments of the group, and determine the probability of the gross excess of hits over expectation being due to chance. In practice, using the data of my first five experiments, the odds against a chance explanation being sufficient worked out at more than ten thousand to one.

27. *The Writer's Experiments, continued: (5) Assessment: Three Technical Points.* There are, I fear, three more points which we must get out of the way before we can move on to more interesting matters.

First: There is an obvious danger that our scoring of hits, for use in the subsequent calculation, might be biased by the desire to arrive at a positive result. This might be very serious if we allowed ourselves to count mere *resemblances* of shape, as opposed to literal identity of content—i.e., if we counted a hit just because a drawing was ‘rather like’, or ‘much the same shape as’, or ‘suggested’ an original, instead of being plainly and manifestly a drawing of the same thing. To guard against this, I passed all the material to a third party, who had no previous knowledge of the details of the work, with the originals arranged in such an order that he had no

possible means of knowing which originals had been used in which experiment. Thus, even if he had wished to do so, he *could* not, except by chance,¹ have credited the subjects of any experiment with an undue proportion of hits on their own originals, for the simple reason that he did not know and could not know which those originals were. This is an awkward and unsatisfactory method of scoring hits, for many reasons, and I should not use it for routine work once the reality of the effect has been established; but it was necessary for test purposes in the early stages.

Second: It might be objected that, although the procedure I have just outlined satisfactorily disposes of *chance*, it does not eliminate other normal factors which might reasonably be supposed operative. If, for example, the subjects of my second experiment had been Hunting Men, it is reasonable to suppose that they would be more likely to draw Horses (Horse being one of the originals in that experiment) than would a group of subjects drawn from the local Sewing Guild; or if the subjects of my first experiment had been largely Sailors, they would tend to draw more Anchors (Anchor being an original in that experiment) than would ordinary people. Or some event of topical interest, such as a Horse Show, or Navy Week, might tend to make ordinary people think of these things more readily than they usually would, so that if such an event took place at or about the time of the experiment it would be likely to produce spurious results.

This is perfectly true, though all the indications are that such factors exert a surprisingly small and quite negligible influence on what people draw. But it had to be dealt with as a possible difficulty.

Now such factors as these cut both ways. If you are *more* likely, for any reason, to draw a Horse, you must be *less* likely to draw a Needle (or indeed any other object), because you only have ten drawings to make, and the Horse will tend, so to say, to crowd out other objects.

To put it another way—the probability of any object being drawn will not be constant, but will fluctuate up and down about some mean value, and on the average it is an even-money chance whether your use of that object as an original happens to coincide with a peak or a trough. Thus, *provided* the originals are selected at random, as they always were, any topical or like influence is as likely to work, on the average, one way as the other; that is to say, it is as likely to lead to a below-chance (negative) score as to an above-chance (positive) score. But in my first seven experiments, I used a total of eleven sets of ten originals each (the seventh was a fivefold experiment), and the scores for all eleven sets were found to be *positive*—i.e., above

¹ Or just conceivably by the exercise of some extremely queer paranormal faculty of his own; but to suppose this, for critical purposes would be begging the whole question of the occurrence of paranormal phenomena.

chance-expectation. And the probability of getting eleven results of the same sign (i.e., all positive or all negative) out of eleven shots at an even chance is only one in a thousand and twenty-four. So we can safely dismiss the likelihood of this kind of thing being responsible for the effects observed.

Third: The method of 'cross-scoring' groups of experiments against each other, so that (if you like to look at it this way) each is controlled by all the others, is excellent for test purposes; but it is very little use for finding out the kind of things we want to know *about* the phenomena and the way the process works. For example: Do subjects *near* the experimenter score higher than subjects farther away? Do women score higher or lower than men, or older persons higher than younger? Do originals depicting common objects do better than those depicting rare; or those to which the experimenter has given special attention better than those to which he has given less? And so on and so forth. None of these questions, or any like them, can be answered at all conveniently, if at all, by the kind of method I have just described.

28. *The Writer's Experiments, continued: (6) Assessment: Catalogue and Fisher Scores.* The second great step forward in my handling of the subject came when it occurred to me that it should be possible to apply to this class of data the same kind of method that Professor Fisher had suggested for scoring partial successes with cards. I am not going to inflict the details of this, which involve mathematics, on the reader. What it all comes to is that, if we know the observed probability (determined in the way indicated above in the case of Hand) of any object being drawn when not used as an original, we can assign to the number of hits made by any group of subjects in any experiment on any original used (or indeed not used) in that experiment, a *score* which represents the degree of their success.

Such scores are what I might term pleasantly manipulable quantities with the aid of which one can investigate all kinds of problems; and all the interesting results I have obtained, other than the bare fact of the occurrence of the effect, have been attained by their use. Without them, I doubt whether I could have made any worth-while progress at all. Unfortunately, as one goes on doing fresh experiments, or inquiring into fresh points, one goes on using fresh originals, or at least demanding information about the probability of occurrence of hitherto unconsidered sorts of object; and one cannot very well look through thousands of drawings every time one wants information of this kind. It was consequently necessary to go through the whole lot once and for all, and make a catalogue which included every drawing that any percipient had made up to the date of working. This catalogue, with a full description of the scoring method has been published by the great courtesy of the American Society for Psychical Research, (13) and may be consulted by any interested

reader. Incidentally, but not unimportantly, it provides, in conjunction with the method described, at least a very useful yardstick, with the aid of which any one who cares to do experiments on these lines can assess his results (provided his subjects are not too unlike my own) without undertaking the considerable labour of preparing a catalogue of his own or performing the elaborate ritual of cross-scoring large masses of data.

29. *The Writer's Experiments, continued: (7) Various Conclusions.* I do not propose to give a formal list of facts and findings here; it will probably be more convenient to pick them up as we need them at later stages. But there are a few points I would like to run through, which may serve to give the reader a fairly good picture of the kind of way things happen. I deliberately give these conclusions baldly and without detailed supporting evidence; this would only weary the reader, and may be found in my original papers (11, 12, 13, and 14).

1. As already noted, the probability of a hit being scored gradually increases towards the occasion of display, attains a maximum at or about that occasion, and then gradually dies away again. The rate of increase or of decline, however, does not seem to depend on ordinary astronomical or clock time, but on the rate of experimentation, so to put it; that is to say, the increase in the probability of an object being drawn, due to the use of that object as an original, does not drop off at the rate of, say, 10 per cent per month or per week, but at the rate of 10 per cent (or whatever the figure may be) per experiment performed. Or at least this seems to be more important than clock time as such.

2. If a fairly large number of subjects be used, there is no great difficulty as a rule in eliciting the effect. There was a total of 250 subjects in my first five experiments, and of 741 in my first seven. Some, of course, did better than others, but there seems no reason to suppose that the faculty is much more concentrated in a few people than in any other; that is to say, it seems pretty normally distributed.

3. Distance makes no difference. All workers seem to be agreed on this.

4. There is virtually no indication that subjects in any sense 'see' and copy the original. On the contrary, everything seems to happen much more as if those who scored hits had been told, 'Draw a Hand,' for example, than 'Copy this drawing of a Hand'. It is, so to say, the 'idea' or 'content', or 'meaning' of the original that gets over, not the form. In a few cases, it is true—I speak here only from inspection—it looks as if the subject had managed to get some sort of impression of the form alone, without being able to interpret it; and even in these cases, I should say that it is the 'idea of the form', i.e., the experimenter's images of the lines, that has been picked up, rather than that there has been any direct apprehension of the lines themselves.

5. It makes no difference whether the original is in an opaque envelope or not, provided it is known to the experimenter at the time of the experiment or (here the precognitive effect comes in) very shortly after. It does not even matter whether it is actually drawn or not, provided it is 'impressed on the experimenter's mind' in connexion with the experiment. And it does not even matter whether it is known to the experimenter, provided it is known, in connexion with the experiment, to some one who himself is connected with it. In short, the original as such has nothing to do with the process, except in so far as the act of drawing it serves, so to say, to stamp the idea of the object more firmly on the experimenter's mind than would result from merely, for example, just thinking casually of it, or writing its name down.

6. If several experimenters work concurrently, or substantially so, as in my seventh experiment, subjects are no more likely to hit originals prepared and displayed by their own experimenter than those prepared and displayed by others. The process does not depend on any 'rapport' in the sense in which the term is commonly understood—if, indeed, it can be said to be commonly understood in any definable sense at all—though, as will be seen later, there is a more or less equivalent mechanism of great importance.

These conclusions, and one or two others, will make an important contribution to the theory-building of Part II; and it is interesting to note here that those of the fifth and sixth paragraphs could hardly have been reached at all by means of experiments with cards; while those of the first were in fact not so reached, though they possibly might have been, and though the fact of displacement has received its strongest confirmation from the card experiments of Soal, to which we may now turn.

30. *The Work of S. G. Soal.* Dr. Soal is a most remarkable man, for whose work I have the highest possible admiration. Possessed of a more than Jobian patience, and a conscientious thoroughness which I can only describe as almost pathological, he worked in various branches of the subject for many years with nothing but a succession of null results to show for it. So markedly was this the case, and so sceptical had he become, that when at last in 1939 he announced a highly significant positive result, we all felt, as Professor Broad put it at the time, "Is Soal also among the prophets?"

For example, he carried out a long and extremely laborious series of experiments (58) in 1927-9, in which some hundreds of subjects took part, using a great variety of test material (mostly material objects, not merely drawings of them, but also smells, diagrams, numbers, etc.). He obtained many interesting and suggestive reports from his subjects; but nothing that could warrant a positive conclusion. I rather suspect, however, that if this material could be re-analysed in the light of modern knowledge, notably of

displacement, we should find it a good deal more positive than he thought at the time; unfortunately, this is scarcely a practical proposition under present conditions.

In 1934 he undertook an extremely careful investigation of "Marion" (Josef Kraus), the well-known Vaudeville 'Telepathist'. His paper on the subject (59) deserves to rank as a classical example of how such work should, and can, be done. Marion's speciality consists in finding small objects hidden by his audience when he is out of the room; and Soal conclusively showed by a beautiful series of step-by-step tests, that this was due to the subconscious utilization by Marion (whose own belief in the 'paranormal' character of his powers seems to have been perfectly sincere) of trifling clues and indications unwittingly given by members of the audience. The work is not only of considerable intrinsic interest, and a model of this type of research, but of great indirect importance as showing how extremely improbable it is—even apart from his own explicit account of his precautions—that he should have overlooked any source of 'leakage' or any kind of deliberate or unwitting malpractices on the part of his subjects.

Later, hoping to repeat Rhine's results in England, he tested 160 persons, collecting 128,350 Zener-card guesses single-handed, and using the most elaborate precautions against every possible source of error; but all he got out of this was one poor little result, of fifty to one anti-chance odds, showing a tendency to score below chance on ostensible 'pure clairvoyance', a reward hardly commensurate with the labour involved.

None the less, paradoxical as it may appear, if I had to choose one single investigation on which to pin my whole faith in the reality of paranormal phenomena, or with which to convince a hardened sceptic (if this be not a contradiction in terms), I should unhesitatingly choose this series of experiments, which is the most cast-iron piece of work I know, as well as having yielded the most remarkable results. In view of what I have just said about its apparent nullity, this needs some explanation.

Dr. Soal brought his work to an apparent conclusion at just about the time I was working out the results of my first five experiments and discovering—if I may venture on so grandiloquent a term—the facts of 'displacement'. It occurred to me that possibly Soal's subjects were failing to get above chance scores because their hits were displaced to occasions somewhat before or after that on which the card to which they actually referred was used as a 'target'. I will let Soal describe the sequel in his own words: "With remarkable pertinacity Mr. Carington insisted that I should re-examine my experimental data. He suggested that I should compare each guess, not with the card for which it was originally intended, but with the immediately preceding and the immediately following card and

count up the hits. For, according to Mr. Carington, the faculty of extra-sensory cognition might not always succeed in hitting the object at which it was aimed. Just as a rifleman may show a personal bias which causes him persistently to strike the target at a point to the left or right of the bull's eye, so it might happen that the guesser at Zener cards all unwittingly was guessing correctly—not the card the experimenter was looking at—but a card which was one or two places earlier or later in the sequence. . . . It was, however, in no very hopeful spirit that I began the task of searching my records for this 'displacement' effect. And yet, within a few weeks, I had made two quite remarkable finds, which fully confirmed Carington's conjectures. From my records of the guesses of 160 persons I had discovered two whose results exhibited the kind of effect anticipated by Carington."

I do not propose to go into details, for which the reader may consult Dr. Soal's original paper (60). It is sufficient to say that, when the records of these two subjects were examined, the displaced hits, and certain effects connected with them, gave anti-chance odds of many millions to one—though, of course, a thousand to one would have done just as well for our purposes. Fortunately, one of these subjects has been able to continue the work, and another important paper containing much confirmatory as well as fresh matter has recently been published (61) by the same author in collaboration with Mrs. Goldney.

I hope the reader will appreciate how extremely remarkable all this was. Here we have Dr. Soal, strongly sceptical in attitude and a past master of precautionary method, conducting a long and arduous series of tests with cards, and arriving at an almost completely null result. Working altogether independently and using entirely different methods, material and subjects, I discover a certain kind of effect. I suggest that we might not unreasonably expect to find this effect in Soal's data also, although *they had not been collected with this object in view*. Yet, sure enough, examination reveals the effect. Without claiming any special credit for it—since it was certainly an uncommonly lucky bow that I bent, even though not altogether at a venture—it is almost as if, having detected a new element in the spectrum of the sun, I had urged some one to test for it in a slag-heap; or as if I had stumbled on the clue to Mayan inscriptions in the study of an Icelandic saga.

If any one wants a more striking example of one piece of scientific work receiving independent confirmation from another, he must be very hard to please.

31. *Experimental Work: Concluding remarks.* If I have succeeded in conveying to the reader even a rough impression of the weight and variety of the work which has been and is being done in the subject, he will, perhaps understand me when I say that to speak of the

'evidence in favour of paranormal phenomena', as if they were still in doubt, is to proclaim oneself out of date. The present position is as stated by Dr. Thouless, who is not only one of the most perspicacious of critics, but has the great advantage of thoroughly knowing the subject, and says (66) "Apart from the considerable body of earlier evidence, the recent experiments of Rhine and his collaborators, of Soal, of Tyrrell, and of Whately Carington, have put beyond question both the reality of the phenomenon and the possibility of its demonstration by experimental methods." And again "... the evidence for the reality of the phenomenon is now so overwhelming that scepticism can only be justified by ignorance of the experimental results."

But I am acutely conscious that, even if this rough survey has correctly given the same impression, it is highly fragmentary and omits many names and much work that I should have liked to include. I particularly have in mind Dr. Gardner Murphy, who is so conspicuously revivifying the research side of the American Society; and Dr. Taves who collaborated with him in an important research in 1937-8, and was later appointed to the Society's Hodgson-Hyslop Fellowship; also Martin and Stribic, of Colorado University, and a whole galaxy of other workers in the States, where experimental work is developing apace. In this country, Dr. Thouless has made some experimental contributions of value, in addition to his great critical services; Mr. Kenneth Richmond is working on Precognition under the Blennerhassett benefaction to the Society for Psychical Research; Mrs. Goldney has done much good work in the subject generally as well as in collaboration with Soal, as has Mrs. Heywood with Mr. Richmond and myself; above all, perhaps, there are signs that some at least of the younger generation of scientists are prepared to take an intelligent and lively interest in the subject, while I myself have enjoyed very extensive collaboration from some eight or ten university departments, so that the prospects of future development are good.

Finally, it is important not to overlook the contributions of those who, like Professors Broad and Price from the philosophical, or Dr. Mace from the psychological angle, have tested and strengthened the logical structure without which experimentation would degenerate into an aimless and jackdaw-like collection of meaningless and uninterpretable facts.

CHAPTER IV

OBJECTIONS AND RESISTANCES

32. *Resistance in General.* Before going on to consider what sort of explanation may best be given of the facts and what theory best makes them fit together in an intelligible pattern, it will be well to consider why it is that they are not more generally accepted, particularly by the scientific world.

It certainly is not because sound criticism has shown the experiments to have been insufficient, the precautions inadequate, or the reasoning faulty. No serious student of the subject fears honest and instructed criticism; on the contrary, he knows very well that sound criticism is as essential to the progress of this branch of science as to that of any other, and that it is only in the light of it that he can refine his techniques and test the validity of his conclusions.

Broadly speaking, the non-acceptance of the facts is due simply to ignorance of them; and the ignorance is due to lack of study of the subject. But the omission of scientists to study the subject, like their refusal to accept the conclusions of those few who *have* studied it, is not, in my judgement, sufficiently accounted for by the reasons they give for it. As I have pointed out elsewhere (7) we relatively seldom form our opinions in the strictly logical way, by studying the evidence first and drawing our conclusions from it; we are much more prone to jump to the conclusions first, and then look round for evidence with which to support them. This is not meant to be disparaging, for I think that even the soundest conclusions are arrived at by essentially the same process; that is to say, by a sort of 'intuitive leap', followed by checking against the evidence. The point is that when we find strong resistance to strong evidence it is at least plausible to suppose that the resistance is not due to the ostensible 'reasons' proffered in its support, but to deeper causes—notably of an emotional character—of which the 'reasons' are no more than what the psychologist calls 'rationalization'; that is to say, reasonable-sounding forms of words which enable the person concerned to continue holding his opinions without incurring the odium of appearing illogical, or revealing (as usually he literally could not do) the true causes of his attitude.

If this is so, it is obviously better policy to try to discover what the true causes of resistance are, and take steps to remove them, rather than waste energy on a frontal assault which will only harden opposition.

One of the commonest objections to the study of 'Telepathy, and 'Psi phenomena' generally, has been to the effect that they are all

mixed up with 'magic' and 'superstition' and therefore beneath the notice of the scientist. I don't know how widely this view is held in scientific circles, but it is certainly a very bad argument. In the first place, scientists have made a habit—one might almost say a tradition—of pressing their researches into the most unpleasant corners of experience, both physical and psychological, and usually with very fruitful results. They have not hesitated to examine the most noisome substances, the most loathsome diseases, the most revolting tribal customs—to which the horrid superstitions of the vulgar may be regarded as a psychological equivalent—in the hope, and often with the result, of gaining valuable accessions to knowledge. It is, I suspect, not so much fastidiousness as the fear of finding something they cannot explain away that makes them shrink from exploring the paranormal field.

33. *Alleged 'Intrinsic Improbability'*. Much more important, because it sounds so logical, is the contention that these phenomena are in a very high degree "intrinsically improbable". From this it is argued, according to taste, either that it is therefore not worth while taking the considerable amount of trouble involved in investigating them, or that the weight of evidence adduced in their support must be 'overwhelming' before they can be accepted.

I do not think we need take the first of these arguments very seriously, for it clearly cannot apply to the conclusions of such competent persons as *have* taken the trouble to investigate; and it cannot plausibly be contended that the bare fact of their having tried so long a shot proves them to be incompetent, for otherwise all sorts of pioneers, e.g., in aviation, would be automatically condemned.

But the second argument is very dangerous, and needs fairly careful consideration. It is dangerous because, if we once allow the sceptic to get away with it, we can never bring him to book. However copious and impeccable the evidence we present, he can always say that, in his opinion, the "intrinsic improbability" outweighs it.¹

This argument may probably best be met by inviting those who use it to state exactly what they mean; but so far as I know this has never been done, and I very much doubt whether they know themselves.

So far as I can ascertain at present, there are only three things they can possibly mean. First: they may mean that the occurrence of a paranormal phenomenon is improbable in the same sort of sense that the occurrence of a dozen sevens running is improbable at a well-conducted roulette table. I do not think they can mean this,

¹ If such persons are pressed to state with precision what degree of evidence would outweigh the 'intrinsic improbability', they usually take disingenuous refuge in demanding something which we have never claimed to occur, e.g., that a subject should give a word-for-word reading of ten pages of an unknown book: as who should say that he will accept the phenomena of electro-static attraction if we will pull down St. Paul's by its aid.

because to affirm that any event is 'improbable', in this sense, is to admit that it *may* occur; and this would be begging the whole question at issue, which is not that of how *often* such things occur, but of whether they *ever* occur at all.

Secondly: they might possibly mean, though I doubt it, that it is very unlikely that phenomena of so important a kind should have remained for so long undiscovered. To this it can fairly be retorted that it isn't, and they didn't. Most of the phenomena of electricity, for example, remained undiscovered until well on in the scientific era, whereas history is crammed with instances of apparent paranormal phenomena, and to say that many of these may have been due to normal causes is not to say that they passed unnoticed.

It is instructive to reflect—a point first made, I think, by Professor Broad (2)—that, if amber and lode-stones had been somewhat rarer than they actually are, we might well have developed an elaborate mechanical science, including even all steam engines, and perhaps flight with gliders, or with steam or diesel driven aircraft, without knowing anything about electromagnetic phenomena at all. The pundits would presumably have scoffed at the few pioneers who reported the attraction of dust by rubbed amber, or of iron by lode-stones; they would doubtless have talked sagely of the "intrinsic improbability" of the alleged phenomena, and have denied that anything could move which was not mechanically pushed, or pulled, or struck by a projectile. Yet the 'para-mechanical' world of electromagnetics would have been operating everywhere all the time, though unsuspected or at least ignored by them.

Finally, they might mean to apply the 'improbability' to the truth of the judgement that such phenomena occur rather than to the phenomena themselves. I think this would be the most promising line for the 'improbabilist' to take, but I do not think it would be worth much. If it could be shown that the judgement that paranormal phenomena occur is identical in all relevant respects with a long series of previous judgements, every one of which proved false, then it would be reasonable to argue that this judgement also is almost certain to be false; but I think this would be a hopelessly difficult task.

34. *Physical Impossibility.* I do not myself think, however, that those who talk about "intrinsic improbability" really mean any of these things, or would attempt to defend any of them very stoutly. I suspect that what they really want to say is that the phenomena are *impossible*, but that they shrink from doing so because so many people have used the word 'impossible' and have then been proved wrong; and certainly the word is one which should be used with great caution.

But in this case, I think their prudence is misplaced. I do not myself think that the phenomena are 'improbable'; I think they are

literally and strictly *impossible*, with the important addition of the words '*within the framework of classical physics*'; and I only insert the word 'classical' as a safeguard, in case it finally turns out (as I sometimes suspect it may) that part at least of quantum and relativity theory belong more to the realm in which physics and psychology meet than to physics proper.

By this I mean to say that, in my opinion, it is as impossible to find a place for telepathy, say, within the physical world of matter and energy as it is to find a place for, say, electro-static repulsion and attraction within a mechanical world restricted to pushes and pulls and projectiles. Or to put it another way, possibly better if not quite so familiar: Every schoolboy knows, as Macaulay would say, that the internal angles of any triangle drawn on a plane (flat) surface must add up to two right angles; it is literally impossible to draw one of which the angles add up to everything else, and this impossibility is, so to say, part of what we mean by a 'plane' surface. By saying 'plane surface' we automatically exclude certain sorts of triangle, just as by saying 'spherical surface' we automatically exclude the more familiar sort, but ensure a sort of which the angles always add up to more than two right angles.

Speaking a trifle loosely by way of illustration, we may say that, out of all the possible sorts of surfaces, we select that particular variety in which triangles have this and certain other properties, because these are the sort we meet with in most of the affairs of everyday life. It is only when we go in for astronomy or navigation or making maps of large areas that we find these will not serve our purpose. In somewhat the same way, the physical scientist selects, or 'abstracts', from the total mass of things he might observe, only those which he can measure (directly or indirectly) with a clock, a meter scale, or a balance, between which measurements he finds that certain formal relations hold; and it is notorious that he has thus succeeded in exhibiting an enormous range of diverse and apparently disconnected phenomena as parts of a close-knit and co-ordinated pattern.

But I cannot see that he is entitled to claim that because he does not find something among the entities he has abstracted, or built up out of the abstracted bricks, that something does not exist, any more than a man who confines himself to the study of plane triangles is entitled to deny the possibility of there being others.

35. *Scientific Apprehensions*. I believe that most scientists would be willing to concede this in principle if only they were not haunted—the word seems not inappropriate—by two closely related fears. The one is the fear that to admit the occurrence of psi phenomena will have the effect of weakening the status of Causality and Law in science; the second is that, if anything of this kind be conceded at all, the way will be opened for the re-introduction in thin disguise of all

the magic and superstition which they have fought against so hard and so long. What, they feel, is the use of substituting differential equations for the arbitrary will of an irascible deity, only to have the incalculable vagaries of a cosmic consciousness infiltrating through the back door?

Taking the second point first, I believe that an understanding of paranormal phenomena will have, in the main, precisely the opposite effect. At present the position is something like this: If the ordinary intelligent man is overwhelmingly convinced of the occurrence of something which the existing concepts of orthodox science are manifestly incapable of explaining, he rightly concludes that there is something incomplete about present-day orthodox science; but he does not know where to draw the line, and is therefore liable to conclude that if one inexplicable event occurs there is no reason why any other should not. For example, he may come across a case of more or less split personality, in which a normally amiable person is temporarily transformed into one of the most objectionable character. If science were not able to give him a satisfactory explanation of this, he might be driven to accept a theory of demoniac possession; and, having gone so far, there is nothing to stop him proceeding to the limit and accepting the whole farrago of terroristic balderdash about Devils and Hell-fire and Eternal Damnation. Or if he has a veridical hallucination, or happens to 'see' an apparition, he may, lacking guidance, come to similarly far-fetched conclusions, and disorder his life accordingly. And it is no use telling such a one that "Science finds no room for demons", or that "Belief in ghosts is mere superstition"; he is (rightly) quite sure he knows better, and prefers to accept what he (wrongly) regards as 'the evidence of his senses'. But if we can explain his case of apparent possession in terms of systems of repressed ideas finding a temporary outlet—like a mood only more so; or his apparition in terms of other systems of ideas associatively linked and telepathically evoked (or something rather like this); then he will understand that he is dealing with matters as orderly and comprehensible as measles or a mirage, and will realize that his former fantasies are quite unwarranted by the facts. In short, it is only when we can explain *why* that we can deal with the too-familiar attitude of "I don't see why not".

As for the Causality, I am convinced that the study of paranormal phenomena will be greatly to extend the domain of Law, and not to narrow it. As I shall have occasion to emphasize later, the difference between physical and psychical or mental entities is not one of 'reality status', if I may coin a phrase, but of the causal laws which they follow; psi phenomena do not conflict with physical law, but, involving entities of a different kind, they follow laws of their own, and it is the prime task of the investigator to find out what these

laws are and to state them with the same precision and logical rigidity as the laws of physics.

Not only is this true but I have a strong suspicion that, when we have pushed our inquiries far enough back, and into what I may call the metaphysical hinterland that lies behind physics and psychology alike, we shall find that the work necessary to give us the properties and causal behaviour of our psychical entities will enable us to clear up at the same time some of the difficulties which at present beset the physicists themselves.

To do this we shall need their help; but I do not think that we can reasonably expect to receive it until we have shown that the phenomena we study do conform to some sort of law and are amenable to theoretical treatment. This is one of the reasons why the development of a good theory is so extremely important.

PART II: THEORY

CHAPTER V

PRELIMINARY DISCUSSION: EARLY THEORIES

36. *The Importance of Theory.* We are now going to consider what kind of a theory can be devised to explain at least some of the 'paranormal' facts, or 'psi phenomena' outlined in Part I, and to link them up with others. But before we start I want to utter two warnings to the reader.

The first, which I hope most will not need, is against thinking that theories are unimportant. We so often hear people speak of 'mere theory', in a disparaging tone, or say "It's all very well in *theory*, of course, but it doesn't work in practice", that the words 'theory' and 'theoretical' have almost become terms of reproach. Such remarks are nonsense, though this does not necessarily mean that those who make them are stupid. It is a matter of the use and misuse of words. What these people are really trying to say is that *fantasies* which have been allowed to escape from the control of facts are dangerous things to rely on and may often be misleading. Even the most 'practical' man knows nowadays that, invaluable as experience is, it is at best a slow and unreliable guide; you cannot make much progress in building bridges, or aircraft, or wireless sets, if you rely on rule of thumb alone—you must have a well-developed theory of structures, or of aerodynamics, or of electromagnetic waves to guide you. But equally the theory must arise from facts, and every fresh deduction from it must be tested against facts. The whole history of science—one might almost say the whole history of knowledge, for there is little difference—shows a kind of alternation of attention from fact to theory and back again to fact. We observe a number of facts, we devise a theory or hypothesis to explain them, we argue that if this theory be correct then other facts must be observable, and then we turn back again to the world of fact and see whether these facts are observable or not. Very often we deliberately devise experiments to give us new initial facts or to test deductions; and often the stages overlap, so that the historical order is not the same as the logical order—e.g., we may devise a theory to account for some only of the facts known to us, and may then find that the others which we had temporarily left on one side are necessary consequences of it. But the essential process is invariable.

Facts without a good theory are like a pile of bricks without an architectural plan—handy enough for throwing at one's enemies,

but not much use for living in. Facts by themselves are no more than the raw material of knowledge; it is by the use of theory alone that we can, as we say, 'make sense of them' and work them into something useful.

37. *The Difficulties of Simplicity.* The second warning is against being scared by the prospect of difficulties which do not in fact exist. Very roughly speaking, there are two sorts of intellectual difficulty; one arises when the matter concerned is unduly complicated, the other when it is unduly simple. Learning the Russian language, or spherical trigonometry, are, for most people, examples of the first; the idea that the earth is not an indefinitely extended plain, with a few mountains on it, but a rock ball moving through space 'without visible means of support', is an example of the second. There is nothing inherently difficult about this idea, and we now take it for granted; but it must have meant a terrible upheaval of thought when it was first introduced. The same applies to many views and theories which are now accepted without question; in these cases, it is the disturbance of previous ideas, not the difficulty of the new ones as such, which makes them hard to accept; in fact the difficulty is emotional rather than intellectual.

The theory I am about to discuss is the simplest thing in the world—at any rate so far as I shall take it here—but it does involve a certain amount of difficulty of the second sort, because it means abandoning one or two habitual notions which are none the less deep-rooted because there is nothing to support them, but rather the contrary. But experience shows that it is mainly by getting rid of unwarranted assumption and false views that progress is made and I believe that the very small amount of effort needed will bring a rich dividend in understanding.

38. *Theory-making in General.* We will naturally begin with the simplest rather than the commonest sort of case, namely that of a subject who correctly guesses the value, etc., of an unseen card, or the nature of the object depicted in one of my drawings, otherwise than by chance.

Our business is to explain how it is that he acquires the knowledge he displays in his guess; but before we attempt this, I think we ought to spend a moment or two in considering what *sort* of explanation or theory could be considered satisfactory.

Broadly speaking, and without attempting any formal analysis, I should say that, when we find ourselves called upon to explain a new fact or set of facts, there are two main ways of doing it, and one classical—but all too common—way of *not* doing it.

The way of not doing it is to say that the fact is due to something or other which, on closer examination, is found to amount to no more than a re-statement in different words of the fact itself. Thus, if we try to explain why a lodestone hung up by a string tends to

set itself north and south, we may say that it is because there is a 'devil' imprisoned in the lodestone, who is trying to return to his home in the north (or south, according to which end you are looking at); and this, I understand, is what was actually said by those who first discovered this property of lodestones. But this is not helpful *unless* we know, from our previous study of 'devils' that they are of such a nature that they can be imprisoned and that, when they are, they strive to return to their homes instead of curling up contentedly wherever they find themselves. If our antecedent knowledge of the creatures tells us that they do this last, then we have to say that lodestone devils have the special property of home-seeking (and that their home is in the north), and this is only to transfer the attribute of north-seeking from the lodestone itself to the supposititious devil. This is no more than tautological, for it adds nothing to the statement that one end of the lodestone 'seeks the north'—we are merely substituting the word 'devil' for the words 'one end of the lodestone'—and to use the word 'north-seeking' is only another way of stating the fact observed.

Similarly, if we try to explain telepathy by saying that a thought is carried by a spirit, it is no explanation at all, *unless* we have such antecedent knowledge of the existence and habits of 'spirits' (which, *pace* the Spiritualists, we most emphatically have not) as justifies the supposition that they are able and willing to act as messenger-boys, and such antecedent knowledge of 'thoughts' as to justify the idea that they are transportable. Theories of this kind, invoking any sort of entity not previously known to have the properties needed to do the trick are what I may term 'no-theories'; they are only meaningless forms of words, against which Professor Price (44) wisely warns us.

Of the two ways of producing an explanation which really means something and is helpful, the first consists in showing that the new fact is really a special case of a class of fact already known; as, for example, when we explain a lightning flash by saying that it is the same kind of thing, notably a passage of electricity from a body at a higher potential to one at a lower, as the spark produced by stroking a cat's fur the wrong way on a frosty night, but on a larger scale. This sort of thing is 'explanation' rather than 'theory', properly so-called, because it consists in showing that the properties of certain entities (e.g., of 'positive and negative electricity') which are deemed responsible for one set of facts may equally be deemed responsible for another set. Naturally, however, no matter how successful we may be in bringing apparently diverse groups of facts under the one hat, as it were, there is a limit to the process and a point at which we are left holding the hat, and wondering how to explain *it*; at some point, that is to say, we are left with a sort of 'irreducible'—and, of course, taking knowledge as a whole, there are at present many more than one. But the essence of explanation consists in reducing the

number of these irreducibles and in exhibiting as many facts as possible as resulting from the minimum number of unanalysable entities and relations between them. The classical example, of course, is given by Newton's Theory of Gravitation and Laws of Mechanics, which enabled us to show that the motions of planets and their satellites, falling apples and missiles of war, and a whole host of other phenomena, were all describable and predictable in terms of a few very simple principles. But Gravitation itself remained unexplained and irreducible until Einstein brought together Matter, Gravitation, Space and Time under the larger hat of Relativity Theory; and physicists are still trying to stretch or alter the hat to include Electricity and Magnetism.

But it sometimes happens that this kind of thing cannot be done, because there is not—or at any rate we cannot see—any existing theory, or set of entities with suitable properties, in terms of which the new facts can be explained. In this case we have to 'invent' as it were—i.e. *assume* the existence of some entity or entities endowed with such properties (but no others) as will do the work required of them. This is evidently getting perilously near the 'no-theory' procedure just described above; indeed, it is identical with it if we have to assume a new set of entities for each fact to be explained. It is only legitimate and helpful if and in so far as assuming the existence of one new entity (or very few) will enable us to deal with several (or a larger number of) different facts. For example, the early electromagnetists found that they could account for quite a number of facts by assuming the existence of two 'imponderable fluids' having certain properties; and assuming the existence of the quasi-substance known as the 'luminiferous ether', having certain other properties, enabled Clark Maxwell to show that all optical phenomena were but special instances of electromagnetic waves.

Although this preamble has been rather lengthy, I think it will enable us to deal fairly expeditiously with two types of supposed theory which are sometimes suggested with a view to explaining telepathic and allied phenomena.

39. *'Wireless'-type Theories.* I suppose the commonest remark made on the subject is to the effect that "It must be something like wireless"; and indeed the analogy is superficially tempting enough, since something more or less in the nature of communication may take place, and no wires are involved. But this is hardly sufficient to establish the essential identity of the two processes, and it can hardly be too strongly emphasized that telepathy has not, and apparently cannot have, anything whatever to do with "wireless" at all, or indeed with any other sort of radiation phenomena.

If you want to show that a new fact is merely an example of a known class of facts already explained by an existing theory, you must show that it behaves, so to say, in the same way as they do;

that is to say, that it is governed by the same laws. It is futile to say that the tendency of James to seek the proximity of Phyllis is an instance of gravitational attraction, unless you can show that it conforms to what I may term the 'sub-laws' of gravitation, namely that its intensity is proportional to the product of their masses and inversely proportional to the square of the distance between them. In practice, we observe that great increase in the mass of either tends to reduce rather than diminish the attraction, while, although juxtaposition often leads to a closer contact, mere separation in space may easily increase the efforts of the one to rejoin the other. We conclude, therefore, that this phenomenon is not a special case of gravitation.

But so soon as we start suggesting that telepathy may be 'a sort of wireless', or 'something like wireless', etc., we find ourselves trying to explain why it does *not* behave like wireless, and making excuses for its being so very different. This does not encourage us to accept the 'wireless' theory.

We know, of course, that certain changes in the brain are accompanied by electrical disturbances—as indeed we should expect from our knowledge of chemical change generally and the conduction of impulses, etc., in nerve fibres—and that these can be detected and recorded by the electro-encephalograph, just as similar electrical disturbances in the heart can be detected and recorded by the electro-cardiograph; but this is no justification for supposing that the 'brain waves', any more than the 'heart throbs', are responsible for telepathy.

In the first place, all radiative effects are propagated in accordance with what is called the "inverse square law", which means that in unobstructed space the intensity of the effect at two miles from the source is a quarter what it is at one mile, and a ninth at three miles, and so on. Of course, in practice the space seldom is unobstructed, and ordinary wireless waves are reflected and bent about by various layers of the atmosphere, etc., so that the law does not exactly hold. But we should certainly expect that, if telepathy were anything like wireless at all, there would be a marked falling off with distance in some manner or other, whereas there is universal agreement that distance makes no difference at all. In my fourth experiment for example (11, p. 61), I found that a group of subjects at Duke University, some two thousand-odd miles away, I suppose, did somewhat *better* than the remainder of the much nearer subjects engaged in that experiment, not worse as any radiative theory would lead us to expect. It is true that one or two writers, e.g., Hoffman (25), have tried to surmount this difficulty by one means or another of greater or less ingenuity; but I must confess I do not find these attempts convincing, while anything of the sort necessarily means introducing undesirable complications.

Much more serious is a point which usually seems to have escaped

notice, though it has been raised before, e.g. by Professor Price (45) and myself (7). In all normal modes of communication, such as speech, writing, wireless telegraphy, radio-telephony, etc., we use some sort of *code*, which must be known to both parties if communication is to be successful. We most naturally think of this in connexion with telegraphy (wired or wireless) in which the Morse code is used, and has to be learned specially for the purpose; we tend to forget that language—even our own language—is a code, though we soon realize it if we meet some one we are anxious to talk to but with whom we have no language in common. In any such system of communication, what is transmitted is not the ‘idea’ we wish to communicate, but either some arbitrary marks on paper (writing), or long and short trains of electrical disturbances (telegraphy), or modulated waves in the air (speech), or analogously modulated electromagnetic waves (radio-telephony). None of these are, in themselves, in the least *like* the object or idea they are intended to convey—the marks Dog, for example, bear no resemblance to the animal—so that in all cases there has to be a process of encoding by the sender and of decoding by the recipient before understanding is reached; moreover, the code used must, of course, be agreed upon, expressly or tacitly, beforehand. Are we really to suppose that the mind has such miraculous properties that it can automatically and subconsciously translate to and from a universal (or at least nation-wide) code which no one consciously knows and of which no one suspects the existence?

Almost equally serious difficulties arise when we ask why my subjects, for example, should tend to pick up one of my thoughts (i.e. that of the ‘original’) on a particular evening rather than the many others that passed through my mind; or, indeed, any of mine rather than those of other people. And in general, the more we try to make the wireless theory fit the facts, the more complications and special hypotheses do we have to introduce for the purpose; and this may fairly be said to be the characteristic feature of a wrong theory.

I should rather hesitate to say that it is utterly impossible, in the strict sense of that term, to explain telepathy by means of some radiative type of theory, though I rather suspect that it would prove so; but I am quite certain that we could only do so, if at all, by the introduction of the most hideous and implausible complications.

40. ‘*Sixth Sense*’ Theories. The other more or less popular type of would-be explanation is that which invokes some sort of extra ‘sense’, i.e. something roughly akin to sight or smell or hearing, etc., but relying, presumably, on special sense organs and picking up some special sort of radiation or emanation or effluvium from the object of which knowledge is obtained.

As compared with ‘wireless’ type theories, this kind of view, if we could make it work at all, would have the advantage of being able

to explain cases in which the subject correctly guesses cards, etc., not known to the experimenter at the time of guessing, e.g., in guessing 'down through' a shuffled pack; on the other hand, it could not explain cases in which the subject correctly divines something thought of by the experimenter, but not noted down till after the guess is made, so that, at the time of guessing, there is no material object corresponding to the thought from which the emanations, etc., could reasonably be supposed to proceed. So far as this is concerned the two would-be theories are about on a level.

But I am inclined to think that any attempt at explanation on these lines would involve us in even more fantastic suppositions, if that be possible, than does the 'wireless' theory. Any one who seriously doubts this should read Professor Broad's searching analysis in his Presidential Address to the Society for Psychical Research in 1935 (2).

Many of the same troubles we encounter in wireless-type theories crop up here also, particularly the absence of any decline in effect with distance; and the general trouble is just the same, namely that instead of presenting a pattern of facts so similar to those of sense perception as to suggest that it must be the same kind of process, it is in every ascertainable respect different, so that instead of finding at every step a fresh confirmation of our view, each new fact considered necessitates making a fresh excuse for it. What, we may ask, is the source of energy which projects the particles or radiates the waves constituting the emanation? How do these contrive to pass through solid objects in a way that no form of physical particle or energy can do? Where are the receptor organs which collect them? Up what nerve fibres do they pass? How, in particular, is it that the upper cards of a pack do not obscure the lower? How are drawings used as originals picked out in preference to other adjacent drawings not so used? Why is it that knowledge of the original in the mind of the experimenter, or of some one closely connected with the experiment, makes a difference? We need do no more than ask these questions to see at once that the process bears no resemblance or analogy at all to any kind of sensory perception; so that to talk of a 'sixth sense' is to do no more than make an unprofitable noise in the air, and can appeal only to those who hold as an inviolable dogma that everything in the mind *must* have got there through sensory channels of some sort—which is begging the whole question at issue.

On the whole, I think that, rather than adopt either of these suggestions as a basis for a theory, I would rather reject both and accept the phenomena as bare brute facts, in the Micawbian hope of something turning up some day to make sense of them. Fortunately, however, there is no need for this, since it seems fairly easy to deal with a considerable range of the phenomena by means of perfectly well-established principles coupled with the denial of one or two assumptions usually taken for granted.

CHAPTER VI

THE ASSOCIATION THEORY OF TELEPATHY

41. *Meaning of the Association Theory of Telepathy: (1) 'Association'.* As I have already said, the theory of telepathy, etc., which I myself hold is of the utmost simplicity; but it is of such far-reaching importance, and so fundamental to everything that follows, that I must be forgiven if I appear to labour points which may be obvious to many readers as soon as stated. To make sure that there can be no possibility of misunderstanding, I must begin at the very beginning and work almost in words of one syllable.

I suppose almost every one has heard of the phrase "association of ideas", and has some sort of notion as to what it refers to. But in case there is any doubt the following should make all clear.

It is a matter of common experience that certain ideas hunt in couples, such as bread and butter, stout and oysters, Swan and Edgar; and others in trios, such as Og, Gog, and Magog, or Wine, Women, and Song—and others, of course, in larger groups. By this I mean that if one member of the group comes for any reason to mind the other members are more likely to accompany it, or follow quickly upon it, than are members of any other group. Thus, if any one says "Bread" to you, you are more likely to think of Butter (or maybe Margarine, or Jam) than of Ink or Bootblack or Tintacks. Or if any one says "Cat", you are more likely to think of Mew, Milk, or Mouse than of Bark, Bones, or Bite; and vice versa if "Dog" is mentioned. A very well-known test of the psychological laboratories consists of calling out a list of words, one by one, to the subject, and asking him to reply to each, as quickly as he can, with the first word that comes into his head. This is known as a "Word-association test", and the responses will often throw quite a lot of light on the subject's mental make-up, so to say, as will especially the times which elapse between the calling out of the word and the giving of the reply. The results of such tests prove, if proof other than common experience were needed, that ideas do tend to stick together as it were, in the kind of way I have indicated, so that if one is brought to notice or presented to the mind the other or others are specially likely to recur also. Pairs or groups of ideas of which this is true are said to be "associated"; and the reason why they are so is, of course, because¹ the objects concerned have previously been especially often encountered together in actual experience—or else the words or other symbols representing them have been. Thus it is very

¹ I naturally omit here the possibility of associations being formed by telepathic processes, though this may possibly be of importance later on.

common to experience Bread in close conjunction with Butter or Margarine, but rare to meet it in the immediate company of Boot-blackening or Ink. And the same is true if memories, or mental images are co-present to the mind instead of the actual objects in an experienced situation, though the effect is usually feebler.

We may accordingly state the basic principle or Law of Association approximately as follows: If two ideas, A and B, are presented together, or in close succession, to any mind, and if subsequently one of them be re-presented to that mind, then the other is more likely to accompany or closely follow it than if they had not been so presented together in the first instance. Or we might say: If two objects, A and B, or the ideas of those objects, form parts of a situation experienced by any mind, and if subsequently one of them, or the idea of it, forms part of another situation experienced by that mind, then the idea of the other is more likely to recur to that mind, either at the same time or shortly thereafter, than if the two objects or ideas of them had not formed parts of the first situation.

Neither of these statements professes to be perfect, but I think that either should make matters sufficiently clear for our purpose. It would be better to speak of 'groups of ideas' than simply 'ideas'; and we ought to be a little more precise about the phrases 'in close succession', 'closely follow', and 'shortly thereafter'. Also I should like to emphasize the words 'more likely', as not meaning 'certain' or even 'much more likely'. But I do not think we need go into these points here.

42. *The Association Theory, continued: (2) 'Ideas' and 'Minds'.* On the other hand, I must say something about my use of the word 'idea'. I shall have much to say later about what I conceive to be the nature of 'ideas'; for the moment it will be sufficient to define the term by saying that the words "the idea of X"—X being anything we happen to be talking about—refer to all those images which tend to come to mind when X is mentioned or, as we say, 'thought about'.

It seems hardly necessary to say what I mean by an 'image', but we may as well make quite sure. If I remember some object which I have come across in the past, i.e., which has formed part of my past experience, or just 'think of' some object which is not corporeally present at the moment, my mind is not a blank; my 'field of consciousness' as we call it contains what are known as *images* of the object. Most of these are usually a sort of 'mental picture', and are called 'visual images'; but I may, of course, have auditory images, i.e., a sort of mental echo of a sound; or I may have corresponding revivals of smells, tastes, touches, or sensations of movement, etc. Very importantly also I may have images of the sight, or sound, or sensation of pronouncing *words*, and most of our abstract thinking is done with the aid of these.

Now, if some one says "Cat" to me, I may very well experience

a visual image, either of some particular cat of my acquaintance, or perhaps of a kind of typical cat, built up like a composite photograph out of my memories of many cats; and I am also likely to experience in greater or less degree images of the tactual sensations consequent upon stroking cats, of pain-images consequent upon being scratched by them, of warmth-images consequent upon touching them, and so forth; or, if I do not wittingly experience these, there is no doubt that they are, as we might say, 'nearer' to my field of consciousness (as is shown by the results of association tests) than if the word "Cat" had not been spoken. All these taken together make up my 'idea' of Cat; and a broadly similar group of images makes up your idea of Cat, though it will naturally not be quite the same as my idea, because your experience of cats has not been quite the same as mine, and therefore the different constituents have been differently linked together. I think this ought to be clear enough to go on with.

One other point: The situation when an object is corporeally present in the field of our senses, i.e., when we can see or touch or hear it, etc., is evidently not quite the same as when we remember or think of it in its absence. Speaking quite roughly, we may say that our field of consciousness contains 'sensations' or 'percepts' instead of images. But it would be laborious to have to say "the idea of X or the group of sensations present in the field of consciousness as a result of the corporeal presence of X", or some similar form of words, every time we want to talk about association. So I shall speak simply of the "idea of X", or "the idea X", or perhaps just "X", being present, or being presented, in an inclusive way, to refer to either type of situation, as may be most convenient in the context. In other words, the term "idea of X" is to be understood as including not merely "all those images which tend to come to mind . . . etc.", but also, when occasion demands, "all those percepts which are present in the field of consciousness when the object X is corporeally present and is perceived".

Anticipating somewhat, and putting the matter in a way which will sufficiently serve the present purpose, though I do not regard it as ideal, we may say that the content of any mind (I myself would say simply "any mind", leaving out "the content of") consists at least in part (I would say "solely") of ideas, as defined above, of which some, at any moment, are present in what we call the 'field of consciousness' (a phrase which I shall leave to common-sense interpretation for the moment) and some are not. Those which are will usually consist largely of 'sensations' or 'percepts', or whatever we like to call them, given, so to say, by the immediate environment, while those which are not will consist wholly of images.

We say that those which are not present at any moment none the less 'belong to' or form 'part of' the mind because they can be evoked by the presentation of some idea (see above) which has been

associated with them in past experience, and we usually speak and think of them as being "in the subconscious". We need not enter here into discussions of precisely what this term could or should or did mean in various contexts of the present or past; we need only take it as a convenient metaphor symbolizing the undoubted fact that certain images which are not at any moment 'present to' or 'in the field of' consciousness may become so under suitable conditions, notably when evoked by the presentation of an associated idea. And there is no objection to thinking of the subconscious as a kind of repository from which ideas are, so to say, fished up by association and to which they return again in due course.

43. *The Association Theory, continued: (3) Explanation of the Theory.* We now come to the crux of the whole matter, to which all these preliminary remarks have been leading up.

Consider one of my experiments with drawings. In my capacity as experimenter, I sit down at my desk and my first step is to decide on what I shall draw as an Original by opening a dictionary at random, or taking a slip of paper from a hat, or by some similar ritual. Let us give the name 'O' to the object which I thus decide on drawing; the reader can substitute for this the name of any particular object, such as House, Jug, Ship, etc., if he finds it easier, but I think it better to use a general symbol for the sake of brevity hereafter. I accordingly set to work to draw an O—not, of course, the oval mark, but a representation of whatever the object actually is. This inevitably means that at least some of the various images which make up my idea of O will be present to my mind in greater or less degree. But so also will many other ideas, including sensations, etc., derived from my surroundings. Thus the idea of O will automatically be associated with certain other ideas with which, in general, it would not otherwise have been, or at least its association with them will be renewed and strengthened. Just to harden this a little, so to say, suppose that before I started I placed on my desk some special and rather unusual object not ordinarily there; it does not matter what this is, so let us call it 'K'.¹ Then my field of consciousness as I work will include, among other things, sensations or percepts occasioned by the presence of the object K; and the idea O will become associated with, among others, the idea K.

So far so good; we have K and O associated together in my mind (as also O and a number of other ideas), and it follows from the well-established Principle of Association that, if K be re-presented to me, O (or the idea of O, but see above) is more likely to come again to my mind than if this association had not been formed by

¹ It is not absolutely necessary to introduce this complication at this stage, as the reader will see in a moment; but I make so much use later of objects and ideas which play the part of this special object K—I call them generically K-objects and K-ideas—that I think it is well to introduce the notion at the very start, even at the cost of slight additional complication.

my drawing O in the presence of K. That is to say, if I again see K on my desk, I am more likely to think of O (not, of course, *certain*, but more likely) than I would otherwise have been; we may say, somewhat colloquially, that the sight of K tends to draw up the idea of O from my subconscious.

But it would be generally agreed that, if you are a subject working in the experiment, the sight of a K on *your* desk would not tend to draw up the idea of O from *your* subconscious, and you would be no more likely to think of O than if K were not there; and the fact that K and O were associated in *my* subconscious would have nothing to do with it. Why? Because we always take it for granted that your subconscious and mine are separate. But suppose they are not separate. Suppose we have a common subconscious. Suppose we can both draw on a common repository, so that associations formed by me are effective for you. Then presentation of K to you *will* tend to draw up the idea O, and you *will* be more likely to think of O (and therefore in general to depict it in one of the drawings you make as your contribution to the experiment) than if K and O had not been associated in my mind by the act of my drawing O as an original in the presence of A. And you will on the average tend to draw the same things that I do unexpectedly often, as compared with chance. Which is observed.

Let us leave on one side for the moment what you may regard as the manifest absurdity, not to say the intrusive impertinence, of this supposition, and just clear up the rest of the story. On the assumption that associations formed by me are effective for you, by virtue of a common subconscious, your observed tendency to draw the same things that I do can be explained, provided we have a K to act as a common factor. But I do not supply you with a special K as a sort of peg to hang your thoughts on¹—at least not in experiments as hitherto planned. What, then, acts as a K-object or K-idea, without which the mechanism I have just described evidently will not work?

My answer is that it is the 'idea-of-the-experiment'. Neither you nor I, in these circumstances, are merely 'doodling'; each of us is playing his part in "An Experiment in the Paranormal Cognition of Drawings", to give it its full style and title as printed at the head of my subjects' forms, etc.; and each of us has some fairly definite idea about what this means, even though our ideas may not be in every respect the same. Even if they differ considerably, as they well may, they will be more alike than if one of us were drawing to amuse the children and the other to illustrate a department store catalogue. At the very least, the *words* 'Paranormal Cognition of Drawings' will be prominently before you, and scarcely less so

¹ But see page 70, below. In some of my earlier experiments there was, in effect, a kind of artificial K-object, though it was not deliberately arranged.

before me; and this is amply sufficient in principle to provide a K-idea.

Let us for brevity write E for "the-idea-of-the-experiment", X for the Experimenter, and Y for the Subject. Then the Association Theory of Telepathy may be succinctly stated thus:

"X associates O with E; E is presented to Y, and tends to call up O."

Putting it somewhat less compressedly, we may say:

"The act of drawing the original automatically associates the idea (O) of the object depicted therein with the idea-of-the-experiment (E) in the mind of the experimenter. When the idea-of-the-experiment (E) is presented to the mind of the subject, it automatically tends to evoke the idea (O) of the object depicted in the original, because the association formed is operative for both parties."

Evidently either 'experimenter' or 'subject' may be put in the plural without affecting the principle involved.

I prefer the form of words "because the association formed is operative for both" to "because the parties share a common sub-conscious" or "because at the level at which the process takes place there is only a single mind", on the ground that, although these alternatives come to much the same thing, the first is a more exact statement of what has to be assumed in order to make the mechanism work.

As a very rough and ready analogy we may say: If you and I are in two boats, and I want to transfer to you something which is too heavy or awkward to hand across, the thing to do is to lower it over the side by a rope, and throw you the other end of the rope; the idea I am trying to convey is the heavy object, and the idea-of-the-experiment (E), or any K-idea, is *the other end of the rope*.

44. *The Association Theory, continued: (4) Certain Advantages.* Before going on to discuss and argue about this theory, I think I may be permitted to point out that, even as it stands, it has enormous advantages over either the 'wireless' or 'sixth sense' views, on the score of elegance and simplicity alone. It demands no anatomically invisible transmitters and receivers, no psychic tuning, no sub-conscious and automatic coding, no unknown sense organs or mysterious emanations. The only mechanism involved is of the utmost simplicity and the most well-established respectability imaginable; and the only adjunct is a denial of an assumption commonly taken for granted, namely that associations formed in one mind are inoperative in any other, or that what we commonly call 'individual minds' are altogether separate. And a few hard facts, such as those in which the subject abounds, are enough to outweigh any number of taken-for-granted assumptions.

Indeed, one of my chief fears is that there will be a tendency to reject or brush aside the theory because it is *too* simple. The spirit

of Naaman is all too prevalent to-day, and people all too apt to demand 'some great thing', and to look down on anything which does not qualify for the adjectives 'amazing', 'spectacular', or 'dramatic' in the daily press. I feel that such persons would be much readier to acclaim a theory depending on some 'new ray' (preferably a sort of 'death ray') or a 'higher vibration', or yet another variety of these horrid little particles in which the physicists so delight, than one which depends on nothing more exciting than Association, which is as familiar and commonplace as our daily bread. But I am afraid I cannot oblige.

At this point many readers may well be feeling "I admit that this is all very neat and ingenious; certainly it is a great improvement on the only alternatives yet put forward; and I don't much mind about it being unspectacular. But how are you going to *prove* it?"

The answer to that is easy—I'm not. But I'm going to *use* it, which is very much more important. One cannot *prove* that a theory is true as one can prove that a mathematical proposition is true—except possibly by elimination—though one can prove that a theory is false by showing that it necessarily leads to conclusions which are at variance with fact. The 'proof' of theories, like that of puddings, is in the eating; and it is not too much to say that, provided a theory is useful, it doesn't much matter whether it is 'true' or not. No one, for example, as Dr. Thouless (p. 14) points out, knows whether the Young-Helmholtz three-colour theory of colour vision is strictly 'true' or not, yet "Researches directed by it have solved many more problems than could have been solved by random or undirected research . . ." and "The positive results of investigations inspired by it would remain as evidence of the fruitfulness of the hypothesis" even if it were to turn out to be wrong. An example on a larger scale is afforded by our old friend the luminiferous aether. This was one of the most fruitful hypotheses or theories ever devised, and enabled scientists to co-ordinate and explain an immense range of optical and electromagnetic phenomena. Not much more than fifty years ago, I suppose, the aether was so firmly entrenched as a denizen of the scientific world that Lord Kelvin declared that "the substantial existence of the aether" was the one thing above all others about which scientists were supremely confident, or words to this effect. No one to-day, except possibly one or two die-hards, believes in the 'substantial existence' of the aether, which has been found unnecessary; but this does not diminish the value of the services it rendered.

45. *Sub-laws of Association: (1) The Law of Recency.* But though we may not be able to prove that the theory is true, we can go a good long way towards showing that it is not obviously untrue, and towards demonstrating its usefulness.

I pointed out on page 50 above that it is no use trying to explain

phenomena by claiming that they are special cases of an already known class of fact, following certain known laws and sub-laws, unless you can show that your new facts do conform to the sub-laws; and I emphasized in connexion with the 'wireless' theory that, if you find yourself obliged constantly to make excuses and introduce subsidiary hypotheses to account for their not doing so, then you may be pretty sure that your explanation is on the wrong lines. We must clearly apply the same principle here, and ask whether the facts of telepathy, so far as can at present be ascertained, do conform to the sub-laws of Association, or whether we have to invent ingenious excuses for their failure to do so.

Now, psychology even to-day is in a not very advanced state, and I doubt whether psychologists generally would claim that the laws of Association are fully known. But there are two which may be taken as established well enough to act as tests for the theory; and, as it happens, I have material available in my experiments capable of providing the information required.

Consider first the Law of Recency, which may be stated somewhat as follows: If to any mind there be presented at a given moment an idea A in conjunction with an idea B, and if at some later moment there be presented to that mind the same idea A in conjunction with another idea C, and at a later moment again the same idea A in conjunction with a third other idea D; and if at some still later moment the idea A be re-presented to that mind, then, other things being equal, or on the average, the idea D is more likely to accompany or immediately follow A than is the idea C, and the idea C is more likely to do so than the idea B, and similarly for all successive members of a sequence of ideas successively presented in conjunction with A.

In common-sense language, the ideas more recently associated with A are more likely to 'come up' on re-presentation of A than are those associated with it longer ago. This, of course, is in accordance with common experience. The question of just how and why this occurs is not quite so easy to answer precisely as might appear at first sight, but it does not concern us here, though investigation of the point opens up fields of great interest and importance beyond the scope of this book.

One of the ways in which this works out in practice is as follows: Suppose we cause a subject to learn certain aggregates of material (lists of nonsense syllables are commonly used) on a series of occasions; this may be regarded as causing him to associate successive batches of the material with an 'experiment-in-learning-and-recall'. On or shortly after each such occasion we ask him to write down as much of all the material so far learned as he can remember. We find that, in accordance with the above law, the highest proportion of items recalled will be drawn from those most recently learned, the next highest from those learned on the previous occasion, and

so on diminishingly back to the earliest occasion. Or, if we prefer to look at it the other way, the proportion recalled of the items learned on the first occasion will be highest immediately following that occasion, somewhat lower on the second, lower still on the third, and so forth; and similarly, *mutatis mutandis*, for the items learned on the other occasions. It is more or less as if the associative links between the ideas of the learned items and the idea of the experiment gradually weakened 'with time' as we loosely say, though actually I think it is more the effect of them being, as it were, progressively stirred more and more into the hotch-potch of experience and thus becoming less and less accessible.

Now if, as I contend, the process involved in my experiments (or indeed those with cards, etc.) is essentially of an associative character, we should expect to find the same kind of thing going on. We should expect that, of the O's associated by the experimenter with the idea E in the course of the first experiment, the *highest* proportion would be recalled, or would 'come up', as we have put it, as a result of the presentation of E to the subjects, in the course of the *first* experiment; that a *lesser* proportion would be evoked in the course of the *second* (but a higher proportion, of course, of those used in the second), a lesser proportion still in the third, and so forth.

And this, if the reader will refer back to page 36, is exactly what we do find; for, as I there explain, the probability of scoring a hit (i.e., the proportion of hits scored) is at a maximum at or about the occasion of display, and then declines gradually.¹

It would perhaps be rash at the present stage to declare roundly that this *is* due to the operation of whatever factors are responsible for the Law of Recency; but certainly the effect observed is in accordance with what we should expect from it, so that, at the very least, there is no conflict here.

46. *Sub-laws of Association: (2) The Law of Repetition.* Consider next the Law of Repetition, which may be stated thus: If to any mind an idea A is presented in conjunction with an idea B on n occasions, and if A be also presented in conjunction with C on m occasions, and if n is greater than m ; then, on re-presentation of the idea A, the idea B is more likely to recur, other things being equal, etc., than is the idea C. (And if some other idea, D, is presented in conjunction with A even more often than B was, then it will be more likely to come up than will B.)

In other words, the more often ideas are associated, the closer they stick together. Which again is a matter of common sense and common experience.

¹ The gradual *increase* up to the maximum is a matter of precognition, which I am not prepared to discuss here as it is evidently bound to take us into very deep waters indeed. Very provisionally, we may think of it as a sort of 'memory decline effect in reverse', which is more or less what it suggests on inspection, though I am not at all sure that it is really anything of the sort.

But before we examine the data to see how far they conform to this sub-law, I think we might formally take a step which has been indicated ever since I formulated the theory, though I have avoided it hitherto because I wanted the reader to become acclimatized to the basic idea, and to see that it showed signs of working, before inflicting anything more alarming upon him.

We have seen that the fundamental notions of the theory are twofold, first the ordinary principle of association, second an affirmation to the effect that associations formed in one mind, viz., the experimenter's) are operative for another mind viz., the subject's). But there is nothing magical so far as we know antecedently, or so far as experience to date has suggested, about the experimenter's mind or the minds of any of the hundreds of subjects involved, or in the experimenter-subject relationship. At any rate we have not supposed that there is, and we have in fact no right to suppose so even if we wished. We accordingly may, and indeed must, suppose that what is true of the minds of an experimenter and a subject is true also of any two minds whatsoever; and we must *generalize* the restricted principle or Law of Association (cf. p. 55) into the following form:

If two ideas, A and B, are presented together, or in close succession, to any mind M, and if subsequently one of them be re-presented to that mind, *or presented to any other mind M'*, then the other idea is more likely to accompany or closely follow it, in the mind to which it is so presented or re-presented, than if the two ideas had not been presented together to the mind M.

This is a pretty sweeping generalization, but not necessarily the worse for that, though it has remarkable implications as we shall see below. It appears, however, to be inevitable once we challenge the watertight isolation of any two minds, unless we can show that they are special cases, which we cannot and have no reason to suppose.

The position is rather analogous to what would have happened if scientific history had followed a different sequence (as in principle it might perfectly well have done) and Cavendish had performed his celebrated experiment demonstrating gravitational attraction in the laboratory *before* Newton had produced his Theory. Cavendish in those circumstances might well have got so far as concluding that every bit of matter in the world (i.e., on the earth) attracted every other bit, with a force proportional to the product of their masses and to the inverse square of the distance between them; but he might also have very well not thought of generalizing his discovery and law to extra-mundane matter. Then Newton could have generalized this to the form "Every particle of matter in the Universe attracts every other particle, etc. . . ." This of course would have been far less than what he actually accomplished, but history might perfectly well have worked out that way, but for the fact that circumstances

combined with the superlative genius of Newton to enable him to take the two steps together.

Accepting, then, this generalization, with the emphasis for the moment on the implication that an association formed in *any* mind will be operative or effective for *any* other mind, it is clear that where repeated acts of association, or associative situations, are concerned, their effect will be cumulative regardless of whether they occur to or in one mind or in more than one. That is to say, if the ideas E and O (in our case) are first associated by being presented in conjunction to mind M_1 , and again by being so presented to mind M_2 . . . and again . . . to mind M_3 , etc., then on presentation of E to the mind of the subject, O will be more likely to come up¹ than if they had only been presented in conjunction to one of these minds. It is the number of co-presentations, not the ownership of the mind, so to say, that matters.

47. *Conformity with the Law of Repetition.* Now, in my sixth experiment, (12) I had occasion, for certain reasons into which I need not enter here, to adopt the following procedure: I made out a list of 216 names of objects which I considered to be suitable for use as originals in the experiment. I sent this list to a third party, who randomly selected fifty of these objects and illustrated them as for use as originals in the usual way. These fifty 'potential originals', as I may call them, were placed each in a separate substantially opaque envelope and sent to a fourth party. From these fifty envelopes the fourth party and I randomly selected ten for actual use in the experiment. In due course, I opened each of these envelopes, one by one on each of the appropriate ten evenings of the experiment, and withdrew the 'potential original' which was then traced over in ink by either my wife or myself—in order to ensure that we paid due attention to them and impressed them suitably on our minds. These ten drawings, with the tracings, were then used as originals in the ordinary way.

Thus, among the 216 objects listed in the first place, we may distinguish three clearly defined classes, which underwent varying numbers of associative acts. These actually used as originals were first listed by me, then drawn by the third party, then traced by me (or my wife), making three associative acts of which one was in the third party's mind, one in mine, and another either in mine or my wife's; those listed and drawn but not used were subjected to only two, one in my mind and one in the third party's; while these only listed were subjected to but one, in my own mind. Long afterwards, and after I had computed the results for these first three classes, I took another sixty names of objects randomly from a dictionary to serve as controls, and these may fairly be regarded as even less

¹ The words "other things being equal, or on the average" may be understood as implied in all remarks of this kind henceforward, unless expressly excluded.

strongly associated in my mind with the idea of the experiment than the third class of 'listed only' objects.

Now, if repetition of the associative act, regardless of the mind in which it takes place, tends to strengthen the association in the telepathic process, as it does in ordinary psychological experiments, etc., we should expect that, when we score the performance of the subjects of this experiment against the originals of the three classes, we should find the first to have been the most effective, the second less so, the third less still, and the controls least of all. I had more or less promised myself when I started this book that I would refrain from inflicting figures on the reader, but the results obtained here are so simple and so pleasing that I think I may be permitted an exception. The average scores were: Listed, drawn, and used, 21·2; listed and drawn, but not used, 4·3; listed only and neither drawn nor used, 2·2; controls, 0·2. Considering that the experiment was not originally designed to show this effect, which was quite unexpected and only looked for months later as a check on the theory, I think this is as satisfactory an outcome as we could reasonably wish for.¹

I do not want to attach any more importance to this than it deserves; in particular, I do not claim that it 'proves the truth' of the association theory. But it fits in nicely with expectation, and again we most certainly do not have to make excuse for the facts not conforming to sub-laws.

48. *Subjects score on 'Unused' Originals.* Another point of great interest arises here. The subjects are found to score significantly high on the objects forming the second and third classes taken together, with anti-chance odds of a hundred to one. Most of the work, so to say, is done by those of the second class (listed and drawn) which itself is just significant, the third class being not significant by itself. It might be thought from this that it was the fact of the originals of the second class being actually drawn that made the difference; but subsequent work has shown quite definitely that this is not the case. Significantly high scores can be obtained on objects that are only 'listed', or the equivalent, though the effect is, as we should expect, feeblcr so that large masses of data are required to demonstrate it. For example, in my seventh experiment (using five experimenters and 245 subjects) I sent a packet of thirty folded paper slips, each bearing the name of an object, to each experimenter, who took ten at random for illustration and actual use

¹ Since I have given figures, I must add, for the benefit of the mathematical reader, that the variances of these means are respectively 20·6, 4·7, 1·7, and 1·7. The first mean is highly significant; the second just significant; and the difference between them is very significant, as is also that between the first and the third, and *a fortiori* between the first and the second and third taken together. The scores for the second and third classes taken together are also significant with P less than 0·01.

in the experiment. But the subjects scored significantly high on the objects named on the *unused* slips, though naturally not so highly as on the used originals.

I think it would be extraordinarily difficult to explain this effect in terms of any 'wireless' or 'sensory' type of theory, whereas it follows naturally from the association theory, which declares that all that matters is the associating of the idea of the object with the idea of the experiment, and not the actual originals displayed at all. The function of the original is solely to force the experimenter to think about the object in connexion with the experiment, and thereby to bring about the necessary association. Any other operation that does this, notably that of writing the name of the object down, in an appropriate context, will do as well; though naturally some procedures will be more efficacious than others.

We can also now clear up the fact that some subjects, so far at least as can be judged by inspection (and I have very little doubt of this) appear to pick up an impression of the linear form of the original without succeeding in interpreting it correctly. For example, one of the originals in my sixth experiment was a Bow Tie, and I was for a long time puzzled by a striking and highly significant out-crop of Hour-glasses in the drawings of these subjects, till it occurred to me that these were almost certainly misinterpreted Bows.¹

This sort of thing becomes quite comprehensible if we reflect that the experimenter's 'idea' of the object he depicts—i.e., that group of images which occupies his mind as he thinks of it—will necessarily be augmented as he works by the visual images of the lines he draws on the paper, so that these images, in addition to the others making up his idea of the object, will be associated with the idea of the experiment and will be available to the subject if, so to say, he wants them. The tendency to select such linear images in preference to others is probably a personal idiosyncrasy.

It is worth noting before we pass on that the kind of results we have been discussing above, particularly the very important 'unused slip effect' as we may call it, could scarcely have been obtained with cards—certainly not with five-symbol Zener cards.

49. *Further Confirmation of the Association Theory: Rapport.* I will now turn to one or two other points of interest which support the association theory.

In my seventh experiment, as already mentioned, there were five experimenters, each of whom prepared and displayed ten originals in the usual way. There were also five groups of subjects, and each group was instructed to aim, so to put it, at the originals used by one of the experimenters; subjects were not told that other experiments were in progress. The experiments were not quite

¹ *N.B.* These were not counted as hits on Bow in assessing the results of the experiment.

contemporaneous, but there was a heavy overlap in time, so that they may be thought of as approximately so.

When I organized the experiment I had not thought of the association theory, and somewhat naïvely hoped—though hardly expected—that each group of subjects would score above chance-expectation on the originals used by its own experimenter, but not on those used by others. This did not happen. The 245 subjects taken together scored significantly high on the fifty originals taken together—there was no doubt about that—but they did so without any discrimination between their ‘own’ experimenter’s originals and those of ‘aliens’. This puzzled me until I realized that it would have been very much odder if they had done anything else. It would have been extraordinarily difficult to account for their ability to discriminate and select, if they had shown any. This is, I think, equally true of any alternative theory, so that the observation does not constitute any special confirmation of my own, but it is quite in conformity with it.

On the other hand, it does open up the whole question of what is commonly called ‘*rapport*’, which is a matter of considerable interest, and likely to prove of great importance in certain connexions.

One of our major difficulties has always been to understand how it is that the subject contrives to pick out the experimenter’s (or other ‘sender’s’) thoughts, etc., from the welter of assorted images, etc., which must be supposed available to him; and *mutatis mutandis*, of course, if he is supposed to be ‘seeing’ or ‘sensing’ the object. To deal with this it has been usual to *assume* some kind of ‘*rapport*’ or ‘affinity’ or the like, or something akin to ‘resonance’ between sender and recipient, though no kind of mechanism capable of explaining it has been suggested, so far as I know.

The Association Theory does not need any special mechanism of this kind; it affirms that the required idea is not, properly speaking, ‘selected’ at all, but is given, so to say, a better chance of coming into the subject’s mind by virtue of the fact that it has been associated by the experimenter with the idea of the experiment, E, whereas other ideas have not been so associated and therefore lack this advantage.

This does not mean, however, that there cannot be anything in the nature of *rapport*, or that in certain connexions it may not be important. On the contrary, I think that there must be, and that it is likely to prove of extreme importance when we come to consider some of the more interesting implications of the theory.

Let us consider the elementary mechanism again, and in slightly greater detail. I hope I have made it clear that I consider that, although we may conveniently speak of ‘the idea of a Cat’, say, as if it were a single discrete entity, it should be thought of as a highly complex aggregate of constituents. Let us provisionally think of

such constituents as something like, or roughly corresponding to, chemical atoms, and the complex idea as something roughly corresponding to a chemical molecule; and let us suppose that the constituents (we will call them 'images' for the moment, without prejudice) are linked together to form the idea in a manner roughly corresponding to the way in which atoms are held together in a molecule. We may say, as a matter of definition, that these linkages between constituents are associative, and we may suppose them to be of differing strengths. But the use of the words 'link', 'linkage', etc., must not be allowed to imply anything more than the bare statement of fact that, if one constituent be presented to the mind, those said to be 'linked with' it are more likely to come up than others not said to be so linked; and similarly as regards differences of linkage 'strength'. We must, however, suppose that the linking of these constituents into complex ideas does not exhaust or diminish their capacity for further linkage with other images, etc., as it does in the case of chemical atoms linked into molecules.

If we consider the consequences of this complex constitution of ideas, together with the fact that no two people will have quite the same idea of the same object (as pointed out on p. 56, above), we shall find that it leads to something closely equivalent to rapport. I think this can better be explained, in principle, by doing a little crude simplification rather than by trying to express in ordinary language what can only be properly expressed mathematically.

Suppose I, as experimenter, am drawing the object Brick as original; we may reasonably assume for the moment that your idea of Brick and mine are negligibly different as ideas go, so that we may ignore the fact that each is built up of several constituents and treat each idea as a single unit. But let us suppose, on the other hand, that our ideas of the experiment are almost as different as they can be, so that the only constituents they have in common are the sights or sounds of the four words Experiment, Paranormal, Cognition, and Drawings. Then my idea of the experiment E will consist of these four items plus a large number of others; and yours will consist of these same four items plus some other large number of items, all different (by hypothesis) from mine. When I draw my Brick, the idea Brick will be linked, we will suppose, to all the constituents of my idea E, including the four mentioned. But the links to the other constituents will be of no use to you, because, when you sit down to do your share of the experiment, and your version of E is thereby brought to your mind, only these particular four constituents mentioned will have, so to say, links running to the idea Brick.

But if our ideas E had, say, twenty constituents in common instead of only four, there would be twenty links running to Brick and your chances of following up one of them, so to put it—i.e., the chance

of Brick coming into your mind—would be something like five times as great.

This is crude and over-simplified to a degree, and needs qualification, etc., in half a dozen places; but it should serve to bring out the point that the more closely the E-ideas of the experimenter and subject agree the more likely the subject is to score a hit or 'pick up' the experimenter's idea of the original, or equivalent in other cases. And this will clearly produce a kind of 'rapport' effect, in the sense that some experimenters and subjects will probably work together more successfully than others.

50. *Development of Notion of 'K-ideas'*. We may generalize this conclusion to some extent by reflecting that the E-idea¹ (the 'idea-of-the-experiment') is only a special case of the more general class of K-idea, which may be defined as any idea with which the idea of the original, etc., is associated by the experimenter and is presented to the subject at the relevant time. Thus, moving beyond the purely experimental situation, we may conclude that telepathic 'intercourse' (I don't very much like the word and do not mean it in the sense of deliberate conversation) will take place the more freely as the participants have more ideas and experiences in common, which is what is generally believed without any explanatory reason being given for it.

We shall find all this of great importance when we come to consider the possible formation of 'Group minds' and the like; very likely the astute reader will have already caught a glimpse of the kind of way things may work out in certain conditions, notably when the proportion of K-ideas is high. At the moment I want only to point out that considerations of this kind afford an obvious—but unprecedented—basis for theoretical and even mathematical study of the subject. It is evidently not going to be impossibly difficult to make assumptions based on common sense about the numbers, or proportions, of common elements likely to be found in different people's ideas of different things—e.g., the proportion will presumably be much higher for Circle than for Cat and for Cat than for Communism—and to work out on this basis what type of material is likely to be best for experimental purposes, or most likely to be 'transmitted', or 'shared', spontaneously under various conditions.² We can then

¹ This ought probably to be extended to cover all elements of the experimental situation as a whole, including large numbers of items, such as tables, chairs, paper, pencil, and surroundings generally, which are in no way peculiar to the experiment as such. These, which presumably have innumerable associative links running to all manner of things, would act as what might be called diluting material. Perhaps if we could exclude all these from the subject's mind, e.g., by hypnosis, we might get much better results.

² The word 'transmitted' is not good, because it inevitably suggests motion across space, and this is almost certainly not in question, as I shall explain below; but it is convenient and permissible, provided we are clear that it is to be understood only in an analogical and Pickwickian sense.

compare our theoretically worked-out expectations with observed facts and see how wrong we are; which is the standard scientific procedure by which we gradually refine our knowledge.

We have just seen that, the higher the proportion of K-ideas or of common elements in the E-ideas, which comes to the same thing, the greater are the prospects of success. The question naturally arises as to whether we might not be able to promote success by the introduction of artificial K's. So far no expressly designed experiments have been conducted on this very important point, but a certain amount of evidence is available.

51. *Artificial K's: 'Photograph' versus 'No-Photograph' Experiments.* In all my early experiments except the second, I supplied my subjects with copies of a photograph of the relevant parts of my study, showing a sheet of blank paper pinned to the book-case in the position which would be occupied by the original when 'displayed'. My second experiment, as already explained, was a group experiment performed under laboratory conditions, and no photographs were used in my seventh and eighth experiments conducted by experimenters other than myself—mainly because it was not a practicable proposition to arrange for one, and I did not at the time attach any importance to it.

I must freely admit that my use of a photograph in this way was intended purely as what the doctors call a *placebo*; that is to say, I did not expect it to act otherwise than by suggestion, but I thought it might give the subjects a kind of feeling of contact or the like, or cajole them into imagining that their task was not quite so impossible as it looked.

It later occurred to me, however, after I had evolved the Association Theory and the doctrine of K's substantially as described above, that the photograph might very well act as an excellent K, for it would present to the subject a number of images which would be bound to be in greater or less degree associated by me with the original. When I worked out the appropriate average scores, I found the score for all the 'photograph' experiments combined was significantly higher than that for the 'no-photograph' experiments, and the rate of scoring slightly more than twice as high.¹

This does not constitute anything like conclusive proof, however, that it was the photograph acting as a K that made the difference. If I had thought of the possibility in advance, I should, of course, have arranged for a randomly determined half of the subjects to have had photographs and the other half not, and have compared their performances; as it is, it is open to the critic to contend that the effect was due either to the other experimenters being 'worse' than I (e.g., having E-ideas less like those of the subjects than my own, which is almost certainly untrue but somewhat begging the

¹ For figures, see my fourth paper. (14)

question), or to the subjects in the photograph experiments being 'better' than those in the others, which there is no reason to suppose; or to the originals of the photograph experiment being 'easier' than those of the others, which again is almost certainly untrue.

However, I do not in the least wish to stress unduly a finding on which a great deal of confirmatory and exploratory work ought clearly to be done. But it is fair to claim, first, that the theory suggests what looks like a promising way of improving our technique; second, that it has led us to look for a certain effect which, when the facts are examined, is at least not contra-indicated.

CHAPTER VII

SOME IMMEDIATE APPLICATIONS OF THE THEORY

52. *K-ideas and Object-reading.* The doctrine of K's is of very wide application, but it will be convenient to consider here its use in explaining, at any rate, the more elementary facts of what is so unhappily called 'psychometry' (or object-reading). Here is a charming example of this, which, however, I fear I cannot guarantee, though told me on reputable authority. A psychometrist is handed a quite ordinary-looking pebble; she says she is sorry but strangely enough the only thing that comes to mind is "a mad elephant"; the 'pebble' is an elephant's gall-stone. Those who accept the genuineness of this type of phenomenon (now placed beyond any reasonable doubt by the work of Hettinger, as already noted) have hitherto been constrained to account for it by supposing that the objects concerned become 'impregnated' with 'vibrations' which in some obscure, not to say magical, fashion contrive to preserve and to reproduce to the 'psychometrist' or sensitive the past vicissitudes of the object; thus, in this case, the pebble would be impregnated with vibrations which the sensitive would recognize as at least elephantine and possibly calculoid.

This is singularly unconvincing, but what happens is easy enough to understand if we regard the pebble as a K-object. It is, we may presume, strongly associated in the experimenter's mind (assuming he knew what it was, as reported) with the images which make up the idea of gall-stone-afflicted-elephant (presumably showing signs of disquietude). Thus, when the idea 'pebble' is brought to the sensitive's mind, it tends to evoke images representing 'disquieted elephant' in the manner we have already discussed; and the vibrations, etc., simply drop out as superfluous figments of imagination.

In this connexion the following point is of interest. As mentioned earlier, Hettinger found that, if an object belonging to a subject A were handed to the sensitive, and A perused an illustrated paper while the experiment was in progress, the sensitive described impressions relevant to the illustrations at which he was looking. In this case there is no need to invoke the object as a K, because presumably the 'idea of the experiment' will serve as well in these circumstances as in my experiments with drawing. But Dr. Hettinger tried the effect of having *two* people, A and B, both reading illustrated papers contemporaneously, while an object belonging to A only was handed to the sensitive for 'psychometrization'. If the object plays no part, but the idea of the experiment alone is doing the work, then she ought to give as many items relevant to B's illustrations as to

A's. In the event she gave significantly more items relevant to A's than to B's, which is in conformity with expectation.

It would be very interesting to work out the implications of psychometry, in the light of association theory, as regards the reputed efficacy of relics. I think it probable that we should conclude that they might possess, by virtue of acting as K's, certain limited properties not explicable as due to 'suggestion' or to be dismissed as 'mere superstition'. To elucidate these properties and determine their limitations with reasonable precision would probably be more efficacious in destroying the purely superstitious accretions, at any rate as a long-term policy, than merely meeting them with ridicule and abuse, or leaving them ignored to the unenlightened extravagance of the credulous.

53. *The Association Theory and Spontaneous Cases: Crisis Apparitions.* I must now say something about the spontaneous cases, for a theory which did not give a reasonably satisfactory account of these would inevitably be gravely suspect, and rightly so.

At first sight, they are much more difficult to deal with than the experimental facts; but this is only to be expected, because, in doing an experiment, we deliberately simplify the situation, whereas real life introduces all kinds of complications which must be separated out before we can see the essentials of what is going on.

Let us consider a typical case in which A and B are two friends or acquaintances, or perhaps more closely related. A is drowned, and at or about the time of that event B, who has no normal knowledge of it, experiences some kind of impression connected with or suggesting A's death, which is subsequently verified. This may range from a vague and barely recognized feeling to the effect that 'something is wrong with A', to a full-fledged 'crisis apparition' involving an hallucinatory vision representing A with contorted features and dripping clothes—though naturally the more striking varieties are the more likely to be reported.

Let me at once draw the sharpest possible distinction between the basic fact of the situation, and the form in which it is manifested. The basic fact is that B has paranormally 'cognized' or become aware of an event in the life of A, namely, his death. This is what the theory (or any other which might be propounded) is called upon to explain. The form in which this knowledge or awareness is, so to say, dressed up by B is a different matter altogether, though I shall have something to say about it later.

But the event of being drowned, though doubtless more important, is not fundamentally different, from our point of view, from the event of looking at a card or an original. That is to say, the experience of looking at a card or an original would be responsible for the appearance of certain images, etc., in A's mind, which we have called the 'idea of the original'; and the experience of being drowned would

be responsible for the appearance of sensations of wet, struggling, choking, etc., and presumably by those images which constitute his idea of death; moreover, all these images, etc., making up the idea of 'death-by-drowning' will evidently be co-present in A's mind with those bodily feelings and the like which (as we shall have occasion to emphasize later) largely represent any one's idea of himself, and these in turn will be presumably closely linked with such ideas as he may have of his own external appearance.

Now, if we regard A as in the position of the experimenter, it is clear that all this mass of ideas of 'death by drowning', or even of 'my (A's) death by drowning' occupy exactly the same position as does the 'idea of the original' in an experiment with drawings; and we can understand how this idea will tend to come into B's mind, if we can find a K-idea to hook it on to.

I have already implicitly suggested one such idea, namely, A's idea of himself, with which the idea of drowning cannot fail to be associated. If B happens to think of A at an appropriate moment, then this idea fulfils all the conditions of a K, and there will be a tendency for the idea of 'A-drowning' to come to B's mind. Whether it actually does so, of course, is a different matter, depending on local factors, notably the degree of competition from B's immediate environment and so forth; and the form it takes, if it does, is another matter again.

An alternative K is provided by the 'idea of B'. The idea of oneself can never be far from one's mind, even on the most common-sense basis; indeed, I consider that certain elements in it are probably an indispensable part of any field of consciousness, as I shall explain later. So, if A thinks of B at the time of drowning, B's idea of himself will serve in principle as a perfectly satisfactory K-idea.

There are also plenty of external objects, etc., which may very well act as K's. For example, if A thinks of his home, and B is his wife or mother, and occupying the home at the time, we have a ready-made K without further ado. Indeed, there are clearly so many potential K's of one kind and another that the wonder is not so much that such incidents do occasionally occur as that (assuming that they can at all) they do not occur more often. The answer to this is likely to be that, in their milder forms of vague feelings of something being wrong or the like, they probably do occur much oftener than we realize, but cannot be distinguished from the non-veridical feelings of anxiety, etc., commonly experienced by parted friends and relatives. A mother, for example, whose son is on active service, or even on a long peace-time journey, will very likely be troubled by vague fears and pseudo-premonitions of disaster a dozen times a day; and if it turns out that one of these was justified, there is no means of distinguishing it from the many that were not. It will only be when circumstances conspire to lend its especial emphasis

or it is externalized as an hallucinatory vision, that it is identified and recorded.

The foregoing should, I think, make it clear that the Association Theory is perfectly competent to account for at least a large class of spontaneous cases, though it would naturally take a long time to examine every type and discuss whether exceptions might be found; and I think we should be quite entitled to leave the matter here and hand over the job of explaining the mechanisms of hallucination, externalization, etc., to the psychologists.

54. *Application of the Theory to Ghosts and Hauntings: Preliminary.* But I think it will be of some interest to devote a few paragraphs to Apparitions in general and to Ghosts in particular, and these afford at least two instances of unexpected applications of the theory.

Any one interested in Apparitions or Ghosts should read Mr. Tyrrell's recent and extremely valuable paper, (72) which is an important landmark in our study of the subject, and an excellent selection of cases will be found in Mr. W. H. Salter's small book, (53) while the classical sources are Myers, (38) Gurney, (21) and the *Proceedings* and *Journal* of the Society.

I do not propose to go into details here, for a whole book might easily be written on the subject, but I should like to bring out one or two points.

I think Mr. Tyrrell's most important contribution is not so much his theory, with which I considerably disagree while admiring his efforts, as the way in which he shows that the Apparition or Ghost is an entity with perfectly definite properties, which he specifies. Of these, the most interesting from the layman's point of view is the 'negative property', so to call it, of never leaving any physical trace behind it or producing any physical effect whatever. Apparently solid forms may be seen, directly or even by reflection; doors (even when locked) may apparently open and close; a voice or footsteps may be heard; touches may occasionally be felt; but there is no reasonably well-authenticated case on record of anything being found after the visitation of the Apparition or Ghost, otherwise than precisely as it was before. The door is still locked, the snow shows no footprints, the camera (*pace* Sir Arthur Conan Doyle) will record no image, the gramophone needle scratch no trace. The sights, sounds, touches, etc., are purely hallucinatory—which does *not* mean, as I shall have occasion vigorously to insist below, that they are not 'real', but that they are not physical.

It would seem that the standard cliché "I don't believe in ghosts, but I'm afraid of them" should be converted to the form, "I do believe in ghosts, but they are known to be quite harmless, so I am not afraid of them".

The Apparition or Ghost is in the nature of what the theosophists would call a 'thought form'. Mr. Tyrrell speaks of an 'idea pattern',

and I myself would call it a 'psychon system' (I shall explain what I mean by this shortly). I think Mr. Tyrrell and I would agree over this, and also that, in certain cases, at any rate, there is reason to suppose that it is a joint product of the minds of the originator (usually the person it represents) and the percipient: but we should disagree over the mechanism of building up and externalization or projection.

My own view—tentative enough in all conscience—is that Apparitions are 'externalized'—i.e., 'seen' or 'heard' as if located outside the percipient as an ordinary object is—only by those who are capable of what is known as 'eidetic imagery'. This is a sort of imagery, not uncommon in children though rare in adults, in which the image is described as being literally *seen* as if it were outside the subject and in many respects just like a 'real object'. Jaensch, (27) who has worked extensively on the subject, declares that such images may be three-dimensional (i.e., apparently solid) and that cases of auditory as well as of visual images of this externalized type are known. In a tantalizing footnote (p. 23) he describes how Professor Encinas of Santander was much exercised in his mind about an outbreak (*circa* 1929) of alleged miraculous happenings in Spanish churches. According to the sworn testimony of hundreds of 'scientifically educated persons, like engineers, doctors, etc.', pictures of saints stepped out of their frames, walked about, and so forth. After Jaensch had demonstrated to him "the peculiarities of perceptive processes in eidetic subjects" he was convinced that these "were the key to the phenomena in Spain".

It seems to me that it would be perverse to insist on looking further, unless we are obliged to do so, for the externalizing mechanism of Apparitions and Ghosts.

55. *Localization of Haunts.* There next arises the question of why Ghosts 'haunt' particular places. This has puzzled every one who has studied the subject, and a variety of explanations have been put forward. Some suggest that the walls of the building, etc., become 'impregnated with vibrations', like the test objects of psychometry discussed above, others that there is a sort of 'psychic aether' on which 'thoughts' can be 'impressed' and from which the impressions can be read off by suitably sensitive persons.¹

But I do not think that any of this is necessary. Given the Association Theory, we have only to suppose, as seems extremely plausible, that the buildings, etc., act as K-objects. That is to say, the idea of the person or object represented by the apparition or ghost is associated in the originating mind with the idea of the building, etc., and when the latter is presented to the mind of any one else, this idea (group of images) *tends* to appear therein, just like the idea of the original in the way with which we are now familiar. Whether

¹ Compare the 'akashic records' of the occultists.

it in fact makes itself felt or not will again depend on local conditions and rival distraction; and whether it will be externalized into visible or audible form, or get no further than some vague sort of 'impression' will depend on whether the person concerned is capable of eidetic imagery or not.

It is interesting to note that there is nothing here which invests buildings with any special privilege; the ideas might just as well be associated with a person or a piece of furniture, and there is a pleasing case reported by Bozzano (1) in which a family who lived in a haunted house moved, lock, stock, and barrel, to another—and the ghost moved too!

I do not wish to enter here upon a discussion of the many technical problems which arise in this connexion, notably the precise nature and origin of the ideas I have supposed associated with the building, etc., or the degree of autonomous behaviour with which such a 'thought form', or 'psychon system', may reasonably be credited, though I shall have a word or two to say about the second point later. To do so would take us far beyond the scope of this book. My object in raising the matter is twofold, namely, first to show how neatly the Association Theory enables us to deal with the extremely puzzling problem of the localization of haunts; secondly, to afford another example of how the objectionable features of 'paranormal phenomena' disappear so soon as we begin to understand them.

As regards the first, the following small point provides an agreeable makeweight. There is a well known and pleasing case of haunting in which the children of the house were well accustomed to seeing an apparitional animal, presumed to be a dog, running about certain rooms; but, oddly enough, its legs were always below the level of the floor, so that only its body was visible. Inquiry revealed that the original floor had had a new one built over it; thus the apparition was running, so to speak, on the old floor and not on the new. As Dr. Mace (33) observes, this presents "the sort of problem that the psychologist is only too ready to pass on to some one else"; but to the Association Theory it is relatively easy money. It is only necessary to suppose that the originator of the images concerned visualized or saw the dog more in relation to, say, the windows and ceiling than in its relation to the floor. Thus, if the room were originally ten feet high, and the dog two feet, the top of its body would be seen, thought of and visualized as eight feet below the ceiling; and this would be the spacing, so to say, in the image picked up by the percipients. If the new floor were built one foot above the old, it would presumably obscure the telepathic image of the old floor and the lower parts of the animal's legs.

As regards the second. The popular conception of a ghost is all too much of a noxious and horrific monster of 'supernatural' origin,

very capable of doing one a mischief if it gets its bony grip on one. This kind of thing, with the rattling skeletons, the clanking chains, the hollow groans, the grave-clothes and decay,¹ is very properly revolting to common sense and to the scientific mind alike. Such things, one feels, just don't happen, even if they be not mathematically excluded from possibility. And they don't, or, at any rate, if at all, then only as extreme rarities.

But the Apparition or Ghost, conceived as a telepathically provided and eidetically projected system of images, seems as harmless in theory as the creatures themselves appear to be in practice.

56. *Emotional Factors in Telepathy.* A few words about the emotional factor here. It is commonly supposed that intense emotion is, as it were, the driving power behind manifestations of this kind, and on the face of it there is some support for this view. Crisis-type apparitions, as their name suggests, are usually though not invariably connected with some event of emotional significance to one at least of those concerned in them; and ghosts are reputed to be animated by strong desires, as for revenge or the finding of treasure, etc. Personally, I do not think that emotion as such has anything whatever to do with it in any direct fashion. It may, of course, operate indirectly in several ways; for example, it may cause the originator of the haunt to think over and over again of some sequence of actions or events connected with the building, etc., and thus associate the ideas much more closely than would otherwise happen; or it may result in certain types of case being remembered and reported much more often than others; or it may cause a group of ideas to be accepted by the percipient which would otherwise not be. But I do not find the smallest indication in my own work, so far as I can judge by watchful inspection, that emotional factors operate at all as a propulsive force in the manner sometimes believed.

Mr. Tyrrell, who thinks that such factors are potent in apparitional contexts, has suggested to me that the way to increase the probability of a subject scoring a hit in an experiment with drawings would be to invest the original artificially with as strong an emotion as could be aroused. For example, if it were desired to use an original of an axe, one would use an actual axe, preferably bloodstained, illuminated by a green and ghastly light, and would read some imaginative account of the execution, say, of Mary Queen of Scots while the experiment was in progress.

I do not think that this would produce the suggested effect; in fact, on Association Theory, it could hardly do so, for I fail to see how it would serve to associate the idea of Axe especially closely with the idea of Experiment. What it would do, presumably, would

¹ It is interesting to note in passing that, to the best of my knowledge, there is no authenticated case of an apparition or ghost being seen in a churchyard, where popular superstition would chiefly expect to find them; but of course my knowledge is not exhaustive.

be to associate the idea of Horror with the idea of Experiment; so that one might expect some mention of such a feeling if one had previously instructed the subjects to record their introspections.

This concludes my account of the essential features of the Association Theory of Telepathy, and of the more immediate evidential facts which support it—or rather with which it would presumably conflict if it were wrong, but does not. I shall now deal with two or three of the more specific objections likely to be raised against it, and then go on to consider the kind of picture of the mind which seems to me best to fit in with it and with other relevant data.

CHAPTER VIII

POSSIBLE OBJECTIONS TO THE ASSOCIATION THEORY

57. *Preliminary Remarks.* I do not propose to discuss again here the general objections to Telepathy and Psi phenomena as a whole, which I dealt with at the end of the first part, but only such as it seems to me likely may be raised against the theory itself. I think there are only five which are worth considering, and only two of these are at all serious.

First, it will probably be objected that I have been talking throughout of 'ideas', 'images', etc., as if they were 'real things' with 'real properties'—for all the world as if I were discussing chemical substances or golf balls; whereas 'every one knows' that such things are not 'real' at all, but at best only 'such stuff as dreams are made on'.

Second, some people are sure to complain that I have not explained *how* the 'idea' gets *from* the experimenter's mind *to* the subject's mind *across* the intervening space, and that this remains an impossibility no matter how many K's I postulate to help with the job—and doubly so if an idea is a real thing after all.

Third, it may be said that although the theory works very nicely in cases where the experimenter knows the object which the subject is required to guess, it throws no light on those in which he does not, i.e., cases of apparent clairvoyance.

Fourth, there is the question whether, when I say (to put it briefly) that O is associated with E by the experimenter, and that E therefore tends to call up O when presented to the subject, I mean to suggest that the images which come to the subject's mind (whether as constituents of E or of O) are the very same as those which played a part in the experimenter's mind; and, if not, then how does the mechanism work.

Finally, some will resist on the purely emotional and personal ground that, if what I say is true, it will destroy all privacy of thought (or so it may seem to them) and give every one access to the content of every one else's mind.

Let us clear the last two out of the way first.

I do not think any one need have the slightest fear that this work will lead to the secrets of all hearts being revealed, or the privacy of the soul violated. Evidently there is nothing of the kind inherent in the nature of things, or it would be happening now, and the correctitude or otherwise of this or that theory would have nothing to do with it. Nor can I imagine any possible extension of technique that would bring it about. And if it be objected that by implying

that every individual mind is, so to say, linked into one common subconscious, I imply also that everything we usually think of as a thought private to an individual mind is potentially accessible to every other, I should reply: "Yes; I think that is true; and I think also that there are probably innumerable common objects which daily act as K's between one mind and another. But there is safety in numbers, and the process defeats itself. To be able to hear a thousand people talking at once is just the same as to be able to hear no one talking at all—there is nothing but an indistinguishable blur; so that though we may well be bombarded by very many ideas from all sorts of sources, they cancel each other out."

I should not have thought this worth mentioning if I had not actually met one or two people who seemed troubled by it.

As for the question of whether I suppose the ideas which come to the subject's mind, etc., to be 'the very same' as those which play their part in the experimenter's, I can only say that I don't know—and don't very much care. I can see that difficulties of a sort might be raised here; but they seem to be mainly verbal, and I think they are the kind of thing that we may safely leave to the philosophers to deal with. After all, if there is one service of value they perform better than showing that what the plain man regards as sense is really nonsense, it is that of showing that what the plain man regards as manifest nonsense is really sense.

If this seems a somewhat flippant reply, I must confess that I cannot take this kind of difficulty very seriously. Possibly it might be demonstrated, in a purely dialectical sense, that my theory involves the view that there is only one specimen of each kind of image, etc., in all the universe; but, if so, the only appropriate comment would be 'How odd: so what?'. Even if it could be shown (as would be much more serious) that the theory involved investing ideas, images, etc., with contradictory properties, I should merely remind critics that this was true of the aether theory, which was one of the most fruitful ever conceived.

58. *The Reality of 'Ideas'*. But the question of whether I am right in talking about an idea as if it were a 'real thing' is very much more interesting. Let me say at once that I am completely impenitent in this matter. I do regard an idea as a real thing—or at least an aggregate of real things, and I think it of the utmost importance that we should do so. But I do not regard it as a *material* thing, and I doubt whether it is a *physical* thing, unless we stretch the word 'physical' appreciably beyond its usual meaning; and the almost instinctive dislike of regarding an idea, etc., as 'real' arises mainly from a confusion of 'real' with 'material'.

I venture the opinion that the word 'real' and its derivative 'reality' have been the bane of philosophy from time immemorial, and would be better expunged from the language, except for guarded usage

merely as emphatics and in purely colloquial contexts. I submit that the word 'real' can never mean, and has never meant, anything more than 'conforming to definition'.

If, finding a dozen oval objects of lightish buff colour on my breakfast table, I exclaim, "I don't believe these are real eggs", I am not expressing the opinion that they are figments of my wish-stimulated imagination, or dreams in the mind of Beelzebub; I am implying that I think it unlikely that, on closer examination, they will be found to have the properties of those objects which, by common consent, are called *eggs*—such properties, I mean, as edibility, coagulation on boiling, breaking when dropped on the floor, hatchability under suitable conditions, etc., etc. That is to say, I am surmising that, although they have some, they do not have all the properties which define the term "egg"; but they are perfectly real 'dummy' eggs none the less, and may possess all the properties by which at least some class of 'dummy eggs' is defined.

Similarly, the lake seen by the desert traveller in a mirage is not a 'real' lake, because he cannot walk up to and into it and get his feet wet; but what he sees is a perfectly 'real' mirage, because it does conform to the definition of 'mirage'.

Of course, the hardened materialist is quite capable of declaring that what *he* means by a 'real' thing is something he can put in a bottle, or at least detect with a physical instrument, and that if he can't it may safely be ignored. These creatures—more closely akin to zombies than to adult human beings—are sometimes, though decreasingly, found in laboratories, but more often in banks and other homes of fantasy; and this invests them with a disproportionate influence in the modern world, so that it is worth while to deal with the view in question in some detail. Indeed, levity apart, it is a matter of such vital importance that we cannot afford to let it pass; and probably the best way of doing this is by carrying the war into the enemy's country and inquiring what reason he has for supposing that the solid objects possessed of the 'reality' of which he is so unreservedly assured, have any higher claim to be considered real at all than the ideas and images he derides as 'elusive' and 'diaphanous'.

There should be no great difficulty in showing that the 'solid objects' have a lower claim to reality, not a higher.

I do not want to weary the reader by parading all the old philosophical arguments on this subject—indeed, I am no philosopher and could not do so. But I would ask him to consider very carefully, and with as open a mind as possible, the exact nature of the situation involved in the process of perceiving any ordinary material object. Let us examine, mainly from the psychological angle, the process that actually goes on when you undergo the experience commonly known as "seeing an egg".

59. *An Imaginary Experiment.* To simplify matters, let us suppose

that I arrange to perform a kind of experiment. I lead you into a darkened room, seat you in a chair, switch on a light, and ask you to tell me what you see, and the conversation runs somewhat as follows:

You: I see a dark green surface, and I see an Egg on it.

I: You see the Egg clearly?

You: Quite clearly, thank you.

I: Would you mind telling me what an Egg *is*?

You: Well—an Egg is a thing you eat at breakfast, if you can get one.

I: Certainly; but the same is true of Bacon. I should like a fuller definition of an Egg.

You: Very well. An Egg is an approximately ellipsoidal object, about $2\frac{1}{2}$ inches long and about $1\frac{1}{2}$ inches maximum diameter. Its colour may range from almost dead white to a moderate brown. Its surface is smooth, but not polished. It comes out of a hen. If you leave it with the hen long enough, it usually hatches out into a chicken. If you drop it on a hard floor, it breaks into a yellow and slimy mess. If you put it in boiling water for five minutes or more, you find that the transparent slimy part goes hard and opaque white. If you take it away from the hen and don't boil it, it changes after a time and then, if you break it, it smells horrid . . .

I: Thank you—that will do. And you say you can see all this?

You: Well—not exactly, but . . .

I: Excuse my interrupting; but I asked you what you *saw*, and you said “an Egg”. Then I asked you what an Egg *is*, and you told me all this story about hens, and chickens and yellow messes and smells. I don't see any hen or chicken or yellow mess myself; but if you see an *Egg*, and if that is what an Egg *is*, then that is what you must be seeing—supposing you're speaking the truth.

You: Whom are you calling a liar? I tell you I see an Egg.

I: I beg your pardon. But there's something wrong somewhere. You tell me you're seeing an Egg; and I agree with you that you have given a pretty good definition of what an Egg is. If what you see lacks the properties you describe, then it can't be an Egg.

You: Well, at any rate I'm seeing the *shell* of the Egg.

I: Ah! The *shell* of the Egg! A calcareous ellipsoid about a fiftieth of an inch thick, having a surface which is smooth to the touch but not polished, and very easily crushed?

You: That's about it.

I: You can see all that?

You: Well, I can't see the thickness of course, and I haven't touched it, but . . .

I: Try again. I want to know what you actually *see*.

You: Well—if you put it like that, I suppose what I actually see is a dark green ‘background’, and a whitish oval patch on it; and I can see that the patch is rather lighter at the top than lower down,

and the variation in lightness is graduated in a way I find it difficult to describe . . .

I: That's much better. Now, in this matter of seeing . . . you are quite sure that you really do *see* it?

You: Of course I am. What do you take me for? I can believe the evidence of my own eyes, can't I?

I: I doubt it. How do you know I didn't hypnotize you outside there in the ante-room and *suggest* to you that you should, as you call it, 'see' this whitish patch?

You: I don't remember it.

I: You wouldn't. I put it to you that all you can say with certainty is that you are *aware of a whitish patch, shaded in a particular way*. Do you agree?

You: I suppose so, but . . .

I: Then why all this talk about 'seeing an Egg'—it's manifestly not the same thing at all. I don't think you would show to advantage in the witness-box.

You: To blazes with you!

60. *Reality of Ideas, etc., continued.* Now, although I have written the above more or less in the form of a joke, it embodies an exceedingly important point, which is vital to our whole view of Mind and the Universe, and must be taken very seriously indeed.

The point is that all we can ever absolutely and unreservedly *know* are the coloured patches of different shapes, sizes, brightnesses, shadings, etc., and the corresponding features of auditory, tactile, etc., situations. There is evidently a very big gap between these and what we *say* we 'see', or what, if we are not reporting about it, we '*think*' we see.

A common way of dealing with this state of affairs is to say that we bridge the gap by 'inference', and it is easy to give examples which seem to support this view. For instance, we are accustomed, let us say, to seeing Mrs. Jones about the village, wearing a green coat and a red hat; and we never see any one else doing so. One day we see a distant figure wearing such garments, and we conclude, and perhaps report, that we have 'seen Mrs. Jones' in such-and-such a place. But we haven't. We have *seen* (or more strictly have been aware of) two coloured patches, and have *inferred* the presence of Mrs. Jones; and the inference is reasonable, though by no means necessarily correct, since what we saw may have been a visiting stranger in similar costume, etc.

A detailed discussion would be out of place here, but I am not at all sure that this sort of thing is a close enough parallel to perceptual situations of seeing, hearing, etc., to justify the use of the word 'inference' in the case of the latter. 'Inference' seems to me more appropriate to situations where we consciously and deliberately apply logical reasoning, as when we infer the existence of Neptune from

observed perturbations of the orbit of Uranus, or the like. Following Ogden and Richards, (39) I prefer 'interpretation'; but the word to be used is a matter of minor importance, provided we are clear about what is going on.

I think there can be little doubt about this. We have had a considerable experience of eggs in the course of our lives; that is to say, we have observed eggs fresh and stale, raw and cooked, broken and unbroken, etc.; moreover, we have touched eggs, and handled them, and picked them up and cracked them and dropped them, and tasted and smelled them. Every such experience has provided a batch of visual, tactile, gustatory, etc., sensations, not forgetting these derived from our joints and muscles, etc. (kinaesthetic sensations as they are called) consequent upon our movements of handling, lifting, etc. All these are associated together—or, if you prefer it, the 'memory images' of them are associated together—into an aggregate which constitutes our 'idea of an egg'.

Consequently, in accordance with the basic Law of Association, when we become aware of an oval patch of a certain colour, size, shape, etc., of a kind which has been closely associated with all or most of the others, these tend to come to our mind, as the phrase is. In particular, those visual, auditory, and kinaesthetic images which constitute our idea of the word 'Egg', come hastening forward, so that we are likely to report our experience as 'seeing an egg'.

But fully to expand the statement 'I see an Egg' would introduce a strong element of anticipation. For example, we should have to say something like this: "I am aware of an oval, etc., patch; and I expect that the sequence of kinaesthetic sensations commonly described as the experience of stretching out my arm, closing my fingers, and raising my hand, would be followed by certain tactile sensations commonly described as feeling a certain sort of surface, and then by other sensations of muscular origin commonly described as feeling a weight of about so-much." And we certainly anticipate all this, at least in certain cases, by adjusting our muscles in advance to deal with the load to be placed upon them; and, if the egg turns out to be much lighter or heavier than we expected, we experience a certain sense of shock.

But we need not go into this sort of thing more deeply here. I think it should be clear enough that in any perceptual situation we necessarily interpret what is actually, so to say, 'given' (i.e., the oval patch, etc.), and can only do so by virtue of images, etc., associatively linked with those that are given (or others very like them) as a result of previous experience.

Various names have been suggested from time to time for the coloured patches, and their auditory, tactile, etc., analogues. Some people speak of *sense data*; Bertrand Russell calls them either this or *percepts*, which I think is a trifle confusing; personally, I prefer to

adopt Broad's terminology and call them *sensa* (singular, *sensum*), and propose to do so henceforward. For a fuller discussion, see Professor Broad's book (3), *The Mind and its Place in Nature*.

But the point is that, whatever we call them, it is they alone which are immediately present to and apprehended by the mind¹ in any situation of seeing, hearing, touching, tasting, etc., and through them alone that we have, as common parlance puts it, any knowledge of the physical (or any other) world.

It seems to me, therefore, to follow to demonstration that we cannot conceivably, while retaining any trace of sanity, attribute to anything whatsoever a higher degree of or claim to 'reality' than we are prepared to concede to the *sensa* by which we know it, and which alone we know. You might as well vigorously affirm the reality of Australia while denying that of the Australians who alone tell you of its existence and of what it is like.

Of course, we may *mis*-interpret the *sensa*, as when a prolonged consumption of neat whisky leads to us 'seeing' pink rats. It is customary to say that the rats are not 'real', which means only that actions based on the visual experiences interpreted by the usual methods are not followed by the usual results;² but the *sensa* are just as real as any others.

It might possibly be objected here, I suppose, that although I have made out a good case for the reality of *sensa*, images come in a very different category. *Sensa*, it might be urged, are at any rate produced by something outside the body, or at any rate outside the brain, whereas images are 'merely mental'. I don't think this will hold water for a moment. In the first place, I have just pointed out that we can only interpret *sensa* by the aid of associated and revised images; if we had had no previous experience of eggs, we should be unable to interpret, and the oval patch would remain just that and nothing more; so again it would be imprudent to say the least of it, to attribute to material objects an order of reality higher than that of the images indispensable to knowing it. Our notions of what we ordinarily refer to light-heartedly as 'physical objects' are, indeed, elaborate constructs built from *sensa* and images; and at least a very good case can be made out for doubting whether there is anything

¹ I use this form of words 'present to and apprehended by the mind' as a provisional convenience. I do not agree with the view that there is something to be called 'the mind', which is separate from, and could exist independently of, the *sensa* and images which it 'apprehends'. As I shall explain below, I think the mind *consists* of *sensa* and images and of nothing else whatever.

² I cannot resist the temptation to repeat here the story of the Inquisitive Traveller, on which all who prate of 'reality' would do well to meditate. Inquisitive Traveller: "Excuse me, Sir, but do you mind telling me what you have in that basket?" Second Traveller: "With pleasure. I have a mongoose in that basket." Inq. Trav.: "A mongoose! And may I ask why you take a mongoose about with you?" "Because I am going to visit a friend who is very much troubled with snakes—purple snakes, you understand." "But those are not *real* snakes!" "No, Sir, they are not; *and that's not a real mongoose.*"

else there at all. We are sure that a given group of *sensa* represents, so to say, a material egg, because (but only because) when we perform certain tests on it (if we trouble to do so) we experience a certain sequence of *sensa*. E.g., if we drop it (sequence of kinaesthetic, tactile, etc., *sensa*) it breaks (sequence of auditory and visual *sensa*); if it were to bounce instead (different sequence of different auditory and visual *sensa*) we should say it was material all right, but a rubber imitation and not an 'egg'. Or if, stretching out our hand to touch it, etc. (sequence of kinaesthetic, etc., *sensa* again), we were to experience no sensations of touch and resistance (a *sensum* sequence again), we should say that it was not a physical egg that was responsible for the initial visual *sensum* (oval patch), but an hallucination, because the sequences characteristic of physical eggs were not followed.

But this is taking us somewhat too far. I trust that the foregoing will at least have convinced the reader that attacks on the theory on the ground that 'ideas' are 'unreal' is unlikely to prove profitable. It does not in the least matter whether every one (or indeed any one) agrees wholly with what I have said. Provided that it is not demonstrably self-contradictory or at variance with facts—as I think I may say it certainly is not—then the situation as regards these points is at least permissive with respect to the theory; and that is all that is necessary.

61. *Apparent 'Transmission' of Ideas.* Now for the question of how the idea gets from one mind to the other.

In principle, the answer is simple, though not very easy to explain convincingly. The essence of it is that words like 'transmit' or 'transfer' and 'from' and 'to' have no meaning—that is to say, there is nothing to which they can refer—except in a spatial context. To say, for example, that some one 'passed *from* a state of anger to a state of fear' is to use the words 'from' and 'to' in a purely metaphorical sense—if that, indeed—and is not saying at all the same thing as the statement 'he passed from the State of Vermont to the State of Massachusetts'. We must not, except metaphorically and knowing it, use spatial language in discussing non-spatial events and situations. We know, of course, perfectly well that there is nothing spatial about the transition from anger to fear; but have we any reason for supposing that there is anything spatial about the supposed appearance of an idea first in one mind and then in another (or, for the matter of that, in two minds simultaneously)? I think not.

On the face of it there is, because we should all agree that A's mind has a certain special relation to A's brain, and B's mind to B's brain; also that both brains are localized in different positions in space. But this is not the same as saying that the two *minds* are localized in different positions in space. Such a statement could only make sense on the assumption that minds or the ideas composing them are entities to which spatial concepts apply.

But I think there can now be no doubt at all that space—or let me cautiously qualify this by saying ‘physical space’—is a concept which applies only to material entities in the sense that space without matter to occupy it is as meaningless as matter without space to occupy; i.e., it cannot exist.

The traditional view of space was that of a sort of ‘big box with no sides to it, full of emptiness’ into which matter could—hypothetically at least—be introduced or not according to taste; and it was thought that there was no difficulty in principle in imagining truly ‘empty’ space, devoid of any matter at all. There was, it is true, always a certain resistance felt to the notion of ‘action at a distance’ which Newton, for example, accepted for his theory of gravitation, and was at first accepted also by the earliest students of electromagnetic phenomena. Then Faraday and Maxwell and others began to pay attention to what was happening in the apparently empty space between charged bodies or surrounding conductors, etc. They talked of lines and tubes of force, and of waves in a quasi-material medium (the aether) specially invented for the purpose, so that the empty space soon became filled, not to say congested, with all manner of aetheric excitements. Then the aether was found to be unnecessary, and indeed something of an incubus, and quietly faded out of the picture except as (I suppose) a still convenient aid to teaching elementary physics. The supposed properties of the aether were, in effect, transferred to space; but then a further step was taken, and I do not think I shall be seriously misrepresenting modern views if I say that space itself has now faded out of the picture—at least as an ultimate entity existing in its own right—and would now rather be regarded as *being* all that system of tensions and forces generally which operate between the material constituents ordinarily said to be ‘in’ it. Any one who doubts that Space and Matter—or, at any rate, Mass, without which Matter is nothing—are inextricably mixed up and interdependent should read again (almost every one has read it once) Eddington’s *Nature of the Physical World*, (16) which I think will leave no doubt that concepts of space and relationships of distance, as ordinarily understood, are devoid of meaning if applied to non-material entities.

A quotation from Eddington himself will, I think, clinch the point in a rather different way. Under the heading of ‘Non-Empty Space’ he writes (*loc. cit.*, p. 155), “The conception of frames of space and time, and of the non-emptiness of the world described as energy, momentum, etc., is bound up with the survey by gross appliances” (i.e., clocks and scales). “When they can no longer be supported by such a survey, the conceptions melt away into meaninglessness. In particular the interior of an atom could not conceivably be explored by a gross survey. We cannot put a clock or a scale into the interior of an atom. It cannot be too strongly insisted that the

terms distance, period of time, mass energy, momentum, etc., cannot be used in a description of an atom with the same meanings that they have in our gross experience. The atomic physicist who uses these terms must find his own meanings for them—must state the appliances which he requisitions when he imagines them to be measured."

Similarly, I submit, it cannot be too strongly insisted that the terms distance, period of time, etc., cannot be used in the description of a mind or minds with the same meanings that they have in our gross material experience. Ideas simply are not material entities; spatial considerations do not apply; and problems posed in spatial terms are false problems requiring no answer.

Consider: When we say that the idea X is in the mind M, we have no right to mean anything beyond the experimentally verifiable fact that under certain conditions the idea X will form part of M's field of consciousness (or otherwise manifest itself therein by indirect means). Thus, if we say that the idea of Avignon is 'in' my mind, we have no business to mean more than that, if you pronounce the word 'Avignon' in my presence, I shall as a rule become aware of a certain group of images which constitute my idea of Avignon; we are *not* saying, and no one has any right to claim that we are saying, that these images have any *spatial* relation to anything at all. We are referring to a certain specifiable relation, but not to a spatial relation; and, if it were not a nuisance and slightly alarming to the average reader, it would be better to say simply "A is Q to C", where A stands for "that group of images . . . Avignon", C stands for "Whately Carington's mind", and Q for the particular relation just described.

Similarly, when we speak of "Smith's mind" we are not, or should not be, making any statement about its spatial localization; in particular, we are not, or should not be, affirming that the aggregate of images, etc., forming Smith's mind are to be found in any *spatial* relation to Smith's body, such as 'inside' it, or even to Smith's brain; but only that there is a system of ideas, B, every member of which has a certain special relation, R, to Smith's body, S, namely that it can by appropriate methods be brought into association with the sensa occasioned by or corresponding to the stimulation of the sensory receptors of that body. Again, we might better say simply "B is R to S".

This is not to say, of course, that sensa and images may not possess spatial qualities or enter into spatial—or at least quasi-spatial—relationships of their own. No one can doubt that the image of an object may be extended and display distinguishable parts which are to right or left or above or below other parts. In fact, I see no particular objection to claiming that there is a kind of psychic space appropriate to psychic entities. But, if so, it will have to be built up from, or its geometry chosen so as to conform to, observations

made on psychic entities, and a space of which the geometry is adapted to physical entities will not be applicable.

62. *Physical and Psychical Worlds.* To sum up the whole matter as regards both these objections, which are very closely connected. When the sequences of sensa and/or images which constitute our knowledge and experience of the world conform to certain patterns, we rightly say that we are dealing with physical objects obeying the laws of physics, including those of spatial configuration, etc. When the sequences do not conform to these patterns, we have no business to say that we are dealing with nothing at all—this would be a contradiction in terms. We are dealing with non-physical, notably mental or psychical, ‘objects’ or entities obeying mental or psychical laws. It is true that at present we know very little about these laws; but that is no reason for questioning the reality of the entities which conform to them. We do not say that Esquimaux are ‘unreal’ and therefore unamenable to study, because their laws or invariable customs are different from our own; we set to work to observe their behaviour and to deduce the guiding principles that cause them to behave as they do.

To push the analogy a shade further, though without any pretence at precision. Esquimaux and we are alike in that we are all human beings, capable of entering into relationships of various kinds with other human beings. If these relationships are organized in one way, we get an Esquimaux society with its own code of laws and customs; organize them in another, and we get a different sort of society with a different code of laws and customs; but each is as ‘real’ as the other.

Now consider Eddington’s views, (16) with which Bertrand Russell (52) apparently agrees in this matter. Starting with nothing but completely unspecified “relations” and “relata” and “some kind of relation of likeness between some of the relations”, he explains how it is possible, by ordering these on a fourfold basis, to evolve a great part of the laws of physics. But, if this contention be correct, as there seems little doubt that it is in the main—if, that is to say, it is possible to get anything at all out of such extremely general and ‘property-less’ raw material; then it seems clear to me that, by different handling, one should in principle be able to get anything else. For there is clearly nothing whatever about the terms ‘relations’ and ‘relata’, etc., to tell you before the start that you are going to end up with the laws of physics rather than with the laws of psychology, any more than the postulate ‘Let there be human beings’ tells you whether you are going to end up with an Esquimaux or English type of society and set of customs. It must depend on how you deal with the raw material.

It seems to me probable that the view held by Russell, as I understand him, is right, to the effect that the ultimate constituents of the universe are neither mental nor physical but ‘neutral’, and that

the difference between mental and physical objects and events—i.e., between 'mind' and 'matter'—is purely a question of the causal laws which they follow; that is to say, to the differences between the ways in which these ultimate constituents are organized.

63. *Note on Clairvoyance.* We have wandered rather far from the immediate purpose of this division of the book, which was to consider the principal objections likely to be raised against the Association Theory of Telepathy, etc.

One of the most serious, in a certain sense, is that it does not of itself give any explanation of what occurs in cases where a subject scores significantly above expectation on material which is unknown to any one at the time of his scoring; e.g., on a pack of cards, shuffled and laid face down before any one has looked at the order of the cards. If, as we have just assumed, the experimenter does not know what the symbol on any particular card is, he cannot possibly associate this symbol with the idea of the experiment, and there will therefore be no extra tendency for it to come into the subject's mind. Yet the evidence for this kind of apparent clairvoyance is just as strong as for cases in which the experimenter does know the card.

On the bare facts as stated, it looks as if there were some kind of direct apprehension of the card by the subject, not involving the mediation of another mind. This would be exceedingly difficult to explain at all plausibly (at least I find it so, and I know of no attempt at explanation worth considering), but we should be forced to accept it as a brute fact, if we could find no way out.

On the other hand, precognition seems to be as well established as any phenomenon could well be, notably by the work of Soal, discussed on pages 38 and 39, above. If we accept this, as I am quite sure we must, the position is considerably eased. When the subject guesses, say, the third card from the top, the experimenter does not, it is true, know what it is, and therefore cannot 'telepath' it. But he (or some one more or less closely connected with the experiment) is bound to know later, when the guesses are scored, otherwise he could not tell whether the subjects had scored a hit or not. This is essentially the same situation as that prevailing when the subject guesses correctly the card which the experimenter is just about to turn up, instead of the one he just has turned up, as in Soal's experiments; and, if there is any precognition at all, we may as well invoke it in the one case as the other.

Naturally, there are minor complications in special cases, but they are not of appreciable importance compared with the simplification gained by having only one inexplicable factor, to wit, precognition, instead of two—precognition and clairvoyance—and at present I am not convinced that there is any situation of apparent clairvoyance which cannot be dealt with by a judicious combination of precognition with telepathy.

To obtain coercive evidence of clairvoyance it would be necessary to show that a subject has scored significantly high on material of which the relevant nature not only is not known to any one at the time of guessing, but never *will be* known to any one at all. This could be done by a slight modification of Tyrrell's apparatus (see p. 24 above); but the following is simpler for illustrative purposes, though a trifle crude for actual use. Suppose we give the subject a bag containing a thousand counters coloured Red, Green, Blue, Yellow, and White in equal proportions, and put him in a dark room with five boxes in front of him to correspond, from left to right, say, with these five colours. We take the obvious steps to make sure that the room is really dark and that he does not introduce a surreptitious torch, etc., and ask him to sort the counters according to colour into the five boxes. When he has finished his attempt, we give each box a good shake, just to be on the safe side, switch on the light, and count how many he has got right. If nothing more than chance has guided him, we should expect him to get about forty of each colour in the right box; and if he were to do significantly better than this it would be difficult to avoid the conclusion that something in the nature of clairvoyance rather than any combination of telepathy and precognition was responsible. No one would ever know the colour of the counter concerned in any particular guess, and therefore there would be nothing informative, so to say, in any mind, past, present, or future, to influence his assignment.¹

I do not know of any first-class evidence on these lines. If ever I meet any, I fear I shall have to admit true clairvoyance, towards which I must confess to a strong resistance. Rhine has some data of a rather different kind which certainly strongly suggest the same conclusion, but I am still hoping that I may be able to find a way round their apparent implications; but I do not think that even he would claim that this evidence is anything like so strong as that in favour of the types of 'ESP' or 'paranormal cognition' in which the experimenter knows, or will know, the nature of the material to be guessed, and are therefore amenable to the telepathic type of explanation, with a dash of precognition as requisite.

I accordingly do not feel called upon to cross this bridge just yet; though, of course, if we *must* we shall have to. But I am fairly confident that, if ever we do, the explanation will not be found by invoking any quasi-sensory process, but by digging deeper into the metaphysical foundations of the whole subject.

64. *Note on Precognition.* As regards precognition itself, I am much tempted to play for safety by merely affirming it as a brute fact and leaving it at that; and the more so since I can hardly be

¹ In practice it would be necessary to arrange some simple device to enable him to pick out and distribute the counters without touching them, and to ensure that he did so; otherwise it would be possible to claim that he could distinguish the colours by touch.

said to have any views on the subject at all. Besides, in the present state of our ignorance, anything one says is almost certain to be nonsense—and why stretch out one's neck beneath the critic's axe? On the other hand, the problem is so insistent that almost any suggestion not involving a contradiction in terms is worth making, if only to have its defects pointed out and to get it out of the way.

Moreover, Professors Broad and Price have felt it worth their while, as good philosophers clearly should, to examine the matter; and where these angels have trodden, who am I that I should fear to rush in?

In a symposium of the Aristotelian Society and Mind Association (4) Professor Broad, assimilating the phenomena to those of memory, makes the ingenious suggestion that precognition or 'foreknowledge' might be explained by supposing that there are *two dimensions* of time, as it might be a north-south and an east-west dimension, and shows that, if so, an event might be 'past' as regards one dimension while still 'future' as regards the other. If the mind of the 'foreknower' (or part of it) worked in the first, while mundane events took place in the second, we could conceive of foreknowledge occurring without having to face the difficulty of a not yet existent event exerting a causal influence.

On the other hand, the suggestion introduces difficulties of its own, as Price points out and as Broad would be the first to agree. We have to suppose that, if Brown has foreknowledge of the death of Jones, as the result of the collapse of a bridge, then in the time-dimension in which Brown's mind is working, the bridge has already collapsed and Jones is already dead, at the moment of foreknowledge; and it is difficult to see why one dimension should have, so to say, priority over the other as regards physical happenings. None the less, I would not be altogether surprised to see some such notion enter into the final picture in some slightly different form.

For myself, I am disposed to agree with Professor Price in regarding precognition as more akin to or more closely connected with the phenomena of telepathy than those of memory. To a certain extent, this receives support from the experimental facts. The way in which the probability of my subjects scoring a hit on an original gradually increases *before* the occasion of display is so similar, broadly speaking, to the way in which it decreases *after* the occasion, that it is difficult to avoid the suggestion that the same type of cause is responsible for both effects. But even if this be correct, it gets us no nearer explaining precognition except in so far as it suggests that we should focus attention on the psychical correlates of the physical events rather than on the physical events themselves.

The only faint similitudes of positive contributions that I have to offer—and I offer these only on the strict understanding that they are only too likely to be nonsense—are the following:

1. Is it possible that ideas, images, etc., being mental and not physical entities, are not subject to the same temporal restrictions as are physical events; in particular, is it possible that they are, so to put it, imperfectly localized in time? If so, then my present image of, say, an event which happened only a moment or so ago may extend, after a fashion, into the past, and might thus influence or supply an ingredient to one of your past states of mind. Then some state of mind of yours would, at the time it occurred, be influenced indirectly by an event which, at that time, was future and non-existent.

I cannot say I think very highly of this suggestion. But, in face of the so overwhelming evidence, one feels one must say *something*; and it seems to me a shade less crazy to think of my state of mind to-day influencing your state of mind yesterday—both of which have certainly existed and both of which are mental—than to suppose that your mental state yesterday was influenced directly by a physical event which did not then exist at all.

2. Mainly for the benefit of those who enjoy flights of speculative fancy for their own sake, and still more 'off the record', though I like it better myself:

Bertrand Russell contends, as I understand him, that *sensa* (*alias* sense-data or percepts) are actually *parts* or constituents of the object perceived, and there is probably no man living from whom it would be less profitable to differ on such a point. If this is so, is it possible that memory images are also parts of the past events which gave rise to them, but 'distingrated' parts, so to say? Is it conceivable that, if X is any event, we might speak of 'visual X', 'tactile X', 'thermal X', etc., as respectively "the class of all visual appearances (*sensa* and images) commonly said to be of X", "the class of all tactile appearances, ditto . . ." and so on. And could we conceivably maintain that the occurrence of the event consists in a kind of coincidence of members of these classes, so that although the visual, tactile, thermal, etc., constituents of the event exist both *before* and *after* the date of its occurrence, the actual event as a physical happening only exists at the moment when, so to put it, they all join forces?—somewhat as three or more partial pictures of different colours may be superimposed to give one complete coloured print.

In that case, we could say that, when we have a visual precognitive experience, or veridical visual image of an event (or whatever the proper phrase is) we have got hold of something which really does exist, although the event has not yet happened in the physical world.

The notion is not without its attractiveness, and I suspect that something on similar lines will also be necessary if we find ourselves compelled to accept true clairvoyance. On the other hand, I greatly fear that it may prove so vulnerable as to have been hardly worth the putting forward.

CHAPTER IX

PROVISIONAL SKETCH OF THE MIND

65. *Preliminary Remarks.* I think it will now be advisable to attempt to draw some sort of a tentative picture of the kind of thing I conceive a mind to be, in the light of the main facts of telepathy, etc., the Association Theory thereof, and such reflection as I have been able to bring to bear on the subject generally.

It is, of course, not at all easy to know just what any one is referring to when he uses the word 'mind', or what one should refer to when one uses it oneself. Indeed, it is hardly too much to say that most of the controversy on the subject has centred around this question, and especially around whether there is anything beyond the body to which one can refer at all.

I propose to take this last point, all-important as it is, more or less for granted, on the ground that, unless we flatly reject the facts of telepathy and psi phenomena generally, it is simply not possible to account for them in terms of physical and physiological factors alone, and that something else must be introduced. This will scarcely be disputed, for it is at the bottom of all resistance to the facts.

Even so, it is none too easy to decide just what one means by a mind. One might say, with considerable plausibility, that the mind is 'that which is responsible for intelligent behaviour', and one might go on to define 'intelligent' as synonymous with 'purposive', and 'purposive' in turn as 'conducive to beneficial ends'. I think this would command a certain amount of popular support, however much the philosophers might deplore it; but it would be certain immediately to involve us in the most serious difficulties. Apart from having to decide on what 'ends' were to be considered 'beneficial', it would necessitate the inclusion of all kinds of things, such as the brain and nervous system generally, the endocrine glands, and I know not what else, which certainly influence behaviour and in the main with biological benefit, but would certainly not be considered mental by any ordinary person.

I should rather like to be able to use the word 'mind' in some such comprehensive way as this, to denote all the 'directive' factors in behaviour, as I might term them, in contrast to the purely executive factors such as muscles and bones. But, apart from the fact that it might be difficult to know just where to draw the line, existing usage is too strong to upset now; so it will probably be best to think of the 'mind' as something other than the body, brain, etc., and of 'mental' as referring to something other than the physical—that is to say, substantially according to its popular connotations.

I hope I need hardly say that, although I believe the view I shall here develop to be substantially correct in its main outline, I do not advance it as other than very tentative and provisional. There are many points about which I am either in doubt or in complete ignorance, and probably others as to which I shall be obliged considerably to modify my opinions later. But for practical purposes, I think it is much more important to construct a scheme which is reasonably coherent and intelligible, and see how it works out, than to worry overmuch about whether it is correct in every detail.

I should like here to express my great indebtedness (as, indeed, in connexion with all my work) to Professor C. D. Broad, of Trinity College, Cambridge, whose interest has been of as great encouragement as his works¹ of enlightenment, though my views at present have more affinity with those of Bertrand Russell, to whose writings I am also heavily indebted, than with his.

66. *The Mind as a Psychon-System.* According to my present view, then, the mind consists of *sensa* and images, and of nothing else whatsoever. These I conceive to be real entities existing in their own right, of a non-physical character, and bearing to physical entities the kind of relation indicated earlier on page 90, namely, that of having a kind of common ancestor in the 'neutral' entities (*relata*, etc.) out of which the universe is organized. These I consider to be the only constituents of minds, in the same sense that electrons and protons, positrons and negatrons are (probably) the only constituents of matter. I do not regard associative 'links' as constituents, any more than one would regard electric or gravitational 'forces' as constituents of the physical world. That is to say, I do not accept anything as a constituent unless it could, in principle, exist by itself.

In particular, I do not find it necessary to accept 'acts' (of cognition, etc.) or 'consciousness', or anything in the nature of a 'pure ego' or 'self' as constituents.

All this, as indeed everything that follows, is expressly to be understood as qualified by the words 'at present'.

I think it will be convenient to introduce one technical term whereby I can save myself the trouble of writing and the reader of reading phrases like '*sensa* and images', 'group of images constituting an idea', and so forth. I propose therefore to use the generic term '*psychon*' to denote any constituent of the mind, or any group of such constituents, regardless of whether the items referred to are simple or compound, capable of analysis or elementary.²

I do not know, and at present it is not important, whether *sensa* or images or both are ever or always analysable into anything

¹ Notably his book *The Mind and Its Place in Nature*.

² Perhaps I ought to make it clear that the word '*psychon*', as used by me, has no connexion with the '*psychones*' assumed by Marston (36, 37) as the basis of a purely physiological theory of consciousness. This view has not, to my knowledge, been further developed, so there seems little risk of confusion.

comparable with the atoms of chemical elements; but this does not matter for my purpose. The term 'psychon' may be regarded as approximately the mental equivalent of what the chemist calls a 'radical', which formerly meant a single atom, but now more usually a group of atoms capable of behaving as one.

It must be clearly understood that by introducing this *word* I am not introducing any new *thing*; it is purely a term of convenience enabling one to refer to constituents of the mind without specifying precisely what sort of constituent is concerned or what its degree of complexity is.

A *sensum*, then, is the sort of psychon that is produced, or just 'happens', when physical stimuli are applied to sense organs; e.g., when light rays fall on the retina of the eye, or sound waves strike the ear-drum. When this happens, impulses travel up the nerve fibres to the brain and there cause some sort of change in certain cells. The word 'produced' is almost certainly inappropriate, for it is now quite clear that the transmission theory of vision, etc., popularly held is, if not wrong (and up to a point it is certainly right) at least not the whole story. Personally, I very much doubt whether the *sensum* is produced by the brain at all, though changes in the brain are, I think, unquestionably necessary for its 'coming into being' or whatever it is that really happens; but for the present purpose it will do no harm to think of it as being literally produced or generated or created by the arrival of the impulse in the brain cell.

Next, I see no reason to take any other view than that images are exactly the same sort of things as *sensa*, and differ from them only as regards constancy and vividness. That is to say, a *sensum* is more vivid and constant than an image, simply because it is being continually reinforced (so long as the stimulus is applied) by the incoming impulses. When these stop, we are left with an image, which is usually thrust immediately into the background, so to say, by the competition of other *sensa* or images.

I say, then, that the mind is a psychon system, or psychon structure, in very much the same sense that the body is a cell system, that a protein molecule is an atom system, or that a galaxy is a star system. The psychons are linked together into groups and sub-groups and patterns, and all these with each other, by the 'forces' of association in much the same way that cells are linked by adhesive forces, atoms by electrical forces ('valency bonds'), or stars by gravitational forces.¹

One more point here, and then we can proceed to get rid of some of the lumber which (it seems to me) has hitherto impeded our efforts to think intelligently about the mind.

We have said that *sensa* are, in some Pickwickian sense, 'produced' when sensory receptors (sense organs, etc.) are stimulated. Broadly

¹ I use the word 'force' only for the sake of vividness. It does not refer to any 'real thing' any more than it does in physics.

speaking, these stimuli evidently fall into two main classes; namely, those coming from outside the body (rays of light, sound waves, heat from a fire, etc.) and those coming from the inside (aches and pains, sensations of muscular movement, etc.). The two classes are known as exo-somatic (outside the body) and endo-somatic (inside the body) respectively. I am not sure that the distinction is quite so easy to draw as is usually supposed, but the principle is clear enough. There are many more sensations of internal origin and accompanying *sensa*—a loose way of talking, but it will serve—than is usually realized, for it is only when they become acute, as in pain or disturbed conditions, that we notice them; but, in normal waking life, at any rate, there is always a vague ‘mass of bodily feeling’ acting as a background, so to say, to our conscious thought and experience. Bearing this in mind, we will try to give something like precision to the many loose and undefined expressions (e.g., the ‘conscious thought and experience’ of the last sentence) which I have been compelled to use hitherto.

I have spoken, for instance, of a ‘field of consciousness’, as if no one could doubt what it meant; and I do not suppose that it has been misleading. Probably every one has recognized that I was referring to ‘all those things of which you are conscious at any moment’, which is near enough. But what do I mean by ‘you’ in this context, and what do I mean by ‘conscious of’?

I think these points may be explained as follows: At any given moment a certain number of *sensa* are being produced by¹ stimulation of the sense receptors inside your body; others are being produced by stimuli falling on other receptors from outside the body; and there exist various images more or less closely linked with these by association.² I should say that your field of consciousness at any moment consists of, and is, this group of *sensa* and images. To put it another way, which I think is clearer if perhaps less logical, your field of consciousness at any moment consists of all those psychons which at that moment are in process of being associated with your *sensa* of endo-somatic (inside the body) origin, together with those *sensa* themselves.

I hope this is reasonably clear. Various events take place in the physical world, of which your body is a part; some of these occur inside your skin and others outside it; some of each class stimulate

¹ I propose to use this form of words as a matter of convenience, without stopping to explain every time that I do not mean it literally.

² Strictly, of course, the images can hardly have been linked with *these* *sensa*, which we have supposed have only that moment come into existence. We must suppose that the newly generated *sensa* first call up, somewhat magically, images of their similar predecessors, and these the images associated with them in the usual way. There are evidently great difficulties here, but I think we may ignore them in the interests of the picture as a whole. Probably they are part of the general mystery of *sensum* ‘production’ of which at present we know nothing and must accept as a brute fact.

sense organs or 'receptors', thereby occasioning the production of sensa; some of these sensa are associatively linked, directly or indirectly, and more or less strongly, with images; your field of consciousness at any moment consists of all those sensa and images (psychons) to which the foregoing remarks apply.

At this point you may well object that, although this is a clear enough specification of the 'field', I have left out the 'consciousness'. That is true, and it brings me to what is probably the most troublesome point in the whole of psychology and philosophy put together. What is consciousness?

68. *Consciousness and the Self: (2) Suggested View of 'Consciousness'.* One could, I suppose, write a good-sized book doing nothing but enumerate the difficulties which have been caused by the use of the word 'consciousness' as if it were a sort of stuff which could be scraped up and put in a bottle; and whole libraries could be, and have been, written on the difficulties arising from attempts to decide what is meant by such phrases as 'I am conscious', and particularly 'I am conscious of something or other'.

Let us, however, try to cut the Gordian knot by a bold stroke. Consciousness is not any sort of stuff,¹ nor is there any special relation, to which the word 'conscious' or one of its derivatives applies, between something to be called 'I' and something else which I am 'conscious of'.

I am heavily handicapped here by language, which was not designed for saying the kind of thing I want to say (or, indeed, for thinking the kind of thoughts I want to think), but I must do my best.

The word 'consciousness' should refer to the system of relations between psychons in very much the same way as the word 'space' refers to the relations between bits of matter. In so far as it is correct to say that space *is* that system of tensions, etc., existing between bits of matter, so I think it is correct to say that consciousness *is* that system of 'forces' (associations) between psychons.

Altering this slightly. Given two or more bits of matter, there is *ipso facto* gravitation; given two or more psychons, there is *ipso facto* consciousness. But the one is no more substantial than the other; the use of the substantival form 'consciousness' is only an unhappy accident, and that of the form 'conscious of' an even unhappier one.

On the other hand, it is perfectly legitimate and (I believe) perfectly correct to say "this psychon system is conscious" just as it is perfectly correct to say "this material system is gravitational or spatial". Gravitation and space are not mystical entities superadded to the material system; they are part and parcel of it. Similarly, consciousness is not a mystical entity superadded to a psychon system; it is an integral part of it, neither to be added nor taken away.

¹ I once thought it was—more or less—and got myself in a horrible tangle (7) trying to treat it as such.

As for the 'conscious of' story—this is an even worse trick of language, to which there is no exact physical parallel of the kind I have been using. But we do say that 'the earth pulls the moon', which is a rather unilateral sort of remark, though we know perfectly well that the moon also pulls the earth just as hard. The earth, it is true, is the senior partner; but it is, if I may put it so, no more responsible for the gravitational state of affairs than is the moon; delete either and (within the limits of the analogy) the gravitational situation ceases. A massive particle can't be gravitational all by itself, and, if you give it a partner, the one is as much the cause of the resulting gravitation as the other. Similarly, I contend, it is absurd to invoke anything like a Pure Ego or Transcendental Self or mystical what's-it, occupying a unique and privileged position, and say that *it* is conscious of something or other—or of anything at all.

69. *Consciousness and the Self: (3) Suggested View of the 'Self'*. Is there, then, nothing that can reasonably be called a 'self'? Certainly there is, and I don't think it is at all difficult to identify, at least in ordinary cases. But it is a self with the meaningless magic left out of it—and very much the better for that.

The field of consciousness, at any moment, consists of those psychons which are being associated with the bodily feelings of that moment. Note in passing that we may conveniently use the term 'bodily feelings' as a convenient abbreviation of "sensa resulting from the stimulation of endo-somatic receptors", and that we now know what we meant when we talked about images or ideas being "presented in conjunction", etc. The group of sensa representing the bodily feelings will not, of course, be exactly the same on different occasions, but it will constitute a more or less constant common factor, or 'core', running through all the successive fields of consciousness; and I see no special reason why any one who wishes to do so should not say that this is 'the self'.

Personally, however, I do not think I should so limit the term. I think I should prefer to say that my mind consists of the totality of all the psychons which have ever been constituents of my fields of consciousness thus defined, organized into whatever pattern the course of events and the operation of associative processes has in fact organized them into; and I think I should say that "I", or "myself", if that be preferred, *is* that mind, without trying to circumscribe the conception within unnaturally precise boundaries.

It goes almost without saying, of course, that certain ideas or groups of psychons will recur much oftener than others, quite apart from the more or less constant core of bodily feeling just mentioned. In particular, the sensa imposed by our daily environment, and the images called up by these, will form an only less constant feature; and such groups of ideas have, it seems to me, very nearly as much right to be considered as parts of the 'self' as the bodily feelings

themselves. Indeed, perhaps they have more, since your vague background mass of bodily feeling is presumably very like mine, whereas our life's experiences and the things we consequently most often think of (i.e., the commonest psychon groups) are likely to be much more different and individual.

I do not consider that either the momentary field of consciousness, or the mind as a whole, or the 'self' forming the core of both, are to be thought of as having sharp determinate boundaries. On the contrary, each shades off gradually and more or less continuously into regions where, so to put it, the psychons have but a remote and feeble connexion with those we should regard as in the 'centre' of the field of consciousness, with other important parts of the mind, or with that relatively constant nucleus we call the Self. Our field of consciousness at any moment contains certain groups of psychons, notably *sensa*, of which we are vividly aware, but many others also of which we are much less so—right out to some of which we are hardly aware (or, as we say, 'conscious') at all. Somewhat similarly, I think of the 'mind' as in the nature of a kind of graduated condensation of psychons, clustered with increasing 'density' (the word is purely metaphorical) round that semi-constant nucleus which (if we choose, but without necessity) we may call the 'self', which in turn is only a somewhat closer condensation, not necessarily round anything in particular; and the whole outfit, of course, in a constant state of flux and readjustment under the impact of incoming stimuli producing new *sensa* and the operation of the associative linkages between the psychons.

It is easy enough to see how the main condensation is formed, namely, by various groups of *sensa* and images being co-present with the bodily feelings in a field of consciousness, as described above; also why some parts or constituents of the psychon system are more closely linked with the nucleus of bodily feeling than are others, namely, by being co-present in this way on more occasions.

I shall have a great deal more to say later about these associative groupings of psychons, both within and between what we commonly regard as individual minds; but for the moment I want to clear up one or two other points about the nature of the mind as a whole.

70. *Cognition, Emotion, and Will.* It is usual and convenient to speak of three sorts of mental state, or three 'faculties' of the mind; namely, Cognitive, Affective, and Conative. These words refer to states, etc., of, Knowing, Feeling (Emotion), and Willing or Striving respectively; and it is evident that there are real differences between merely knowing a fact, feeling emotional with regard to it, and trying to do something about it. For example, we may *see* a snake in a cage, and know that it is a snake and not a coil of rope, without feeling any particular emotion or any urge to act; if it escapes we experience an emotion of fear, supposing we believe it to be poisonous; and we

then strive to deal with the situation by flight or aggression. It is not suggested that these three states or attitudes are perfectly clear-cut and distinct, but every one will recognize the kind of differences involved; and it is clear that no psychology, or account of the mind, which fails to deal with them adequately can be considered satisfactory.

As regards the 'cognitive' or 'knowing' aspect, we have already said all that is really necessary, though one or two possible sources of confusion need clearing up. The statements, 'I know Jones' and 'I know that eggs break when dropped', are commonly regarded as being of different kinds, one describing acquaintance *with*, the other knowledge *about*, Jones and eggs respectively. But I think it is fairly easy to see that, according to the views I have been developing, 'acquaintance with' is, so to say, merely awareness with embroideries, and 'knowledge about' is merely awareness with more embroideries.

As I have tried to explain, all we only 'know', or are 'aware' or 'conscious' of, immediately and at first hand, are *sensa* and images (i.e., psychons of sorts); and it is *sensa* and images again which constitute the 'mind' that does the 'knowing'. Moreover, what we call the state of awareness or consciousness, or the 'act of knowing or cognition' is the system of relationships, or quasi-forces, between the various psychons concerned, of which none are inherently, or by virtue of their intrinsic nature or origin, privileged as compared with the others, though some recur more often than others. All the more complicated forms of 'knowing' are, it seems to me, results of and dependent on the kind of associational interpretation outlined on page 85. The *sensa* occasioned by the sight of Jones call up, by association, the images of previous situations in which he has figured; and these alone are what make the difference between pure awareness of Jones-*sensa* and acquaintance with him (in the psychological rather than the social sense, of course). And the *sensa* occasioned by the sight of an egg similarly call up images of situations in which eggs have figured and have been dropped, and of the resulting breakages; and these alone make the difference between pure awareness of egg-*sensa* and knowledge of the properties of eggs. Needless to say, ostensible 'knowledge about' may be false, as when some one who has only read of 'white wine' imagines a fluid colourless like gin or truly white like milk; but, psychologically speaking, it is of exactly the same kind and originates in exactly the same sort of way as 'knowledge about' which is true.

So far as all states or situations of knowing are concerned, we need nothing beyond greater or lesser elaborations of the basic psychon-association-consciousness situation. Do we need anything else for Emotion and Conation or Will?

The easiest way to clear this up will be to consider the most famous theory of emotion ever advanced. This is known as the James-Lange theory, and consisted, one might say, in an inversion

of all previous notions. Broadly speaking, the previous view was that, for example, we found ourselves in a dangerous situation, we felt an emotion of fear, and therefore trembled or ran away. The James-Lange theory inverts this and says that the manifestation of emotion is the cause rather than the consequence of the feeling. James (28) put it like this:

"Our natural way of thinking about these coarser emotions, grief, fear, rage, love, is that the mental perception of some fact excites the mental affection called the emotion, and that this latter state of mind gives rise to the bodily expression. My theory, on the contrary, is that *the bodily changes follow directly the perception of the exciting fact, and that our feeling of these same changes as they occur is the emotion* (James's italics). Common sense says: we lose our fortune, are sorry and weep; we meet a bear, are frightened and run; we are insulted by a rival, are angry and strike. The hypothesis here to be defended says that this order of sequence is incorrect, that the one mental state is not immediately induced by the other, that the bodily manifestations must first be interposed between, and that the more rational statement is that we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike, or tremble, because we are sorry, angry, or fearful, as the case may be."

This hypothesis has naturally given rise to much controversy, into which I cannot enter here, and it certainly will not hold water precisely as it stands, since the same 'bodily manifestations' do not necessarily produce the same emotional states. For example, we may weep because we have a cinder in our eye or have smelled an onion, yet not be sad at all; and if we know very well that we can easily outpace the bear we may run in exultation or derision and not in fear.

None the less, I think there can be little doubt that the view of emotion embodied in the theory is basically true. That is to say, I am quite sure that the difference between any state we should commonly describe as emotional and any state we should commonly describe as non-emotional depends entirely on the nature and 'configuration' of (i.e., relationships between) the psychons involved, and that, in order to describe emotional states, there is no need to introduce any new constituent or factor intrinsically different from those involved in the description of other states. Emotional states are *characterized by* the presence of an especially high proportion of certain sorts of endo-somatic psychon, notably those of visceral and perhaps intra-muscular origin,¹ *but* the particular sort of emotion experienced depends not merely on the presence of these visceral, etc., psychons, but on their context and their relations with it. Very roughly one might say that it is as if the emotionality of the picture depended on the number of red blobs on the canvas, but the nature

¹ E.g., I notice in myself that the emotion of horror seems to be closely connected with apparently intra-muscular sensations in the forearms.

of the emotion represented on their arrangement with respect to the blobs of other colours.

Similarly, I think that states described as 'conative'—i.e., those involving 'striving' or 'willing'—are characterized by the presence of especially high proportions of endo-somatic psychons of a different origin, particularly those derived from muscles and joints. To adapt James, the 'willing' follows on the strain (whether factual or imaged) rather than the strain upon the 'willing'. There is no need to assume the existence of a piece of *ad hoc* magic called "the Will".¹

It is accordingly incorrect, and liable to be misleading, to speak of *Cognition*, *Emotion*, or *Conation* in substantival form. It would be better to speak only of *Cognitive*, *Emotional*, or *Conative* states of mind; and better still to think of them as differing modes of consciousness—remembering that 'consciousness' in the substantival form is itself a misnomer, and refers only to the system of forces existing between psychons.

The foregoing is evidently no more than the crudest sketch of the subject, but it will serve my present purpose, provided it be conceded that the only differences between these various kinds of state are those arising from the different varieties and relationships of the constituent psychons, and that nothing fresh is to be imported. This concession is sufficient to enable me to make my next point which is, I believe, of the most profound and far-reaching importance. It is this:

71. *Autonomy of Psychon Systems and Sub-systems.* If what I have said is correct in the above specified respects, then *any system or group of psychons whatsoever will be capable of possessing, and will in fact possess, just so much cognitive, emotional, or conational consciousness as its 'constitution'—i.e., the number, nature, and inter-relationships (linkages) of its constituent psychons—does in fact permit and assure.*

If this view leads to rather odd conclusions, as, for example, that psychon systems forming part of my mind but not of my contemporary field of consciousness are, none the less, the seat, so to say, of emotions or strivings, I see no reason for rejecting it on that account. Such systems presumably could not manifest themselves in overt action unless they came into that relation with my aforementioned 'mass of bodily feeling', etc., which psychons must occupy in order to interact with the brain cells (if that is what happens).²

¹ I firmly refuse to be drawn into any discussion of 'free will', beyond saying that I am fairly certain it will end by being recognized as a false problem. But it seems mildly diverting to point out that, so long as we are willing to concede a reciprocal interaction of psychons and nervous system (brain) at all, the problem can hardly arise. For either we exercise our 'Will', in whatever direction, for some 'reason' (good or bad), or we do not. If we do, then the Will can be replaced by some suitable psychon group; and if not, then by the laws of chance.

² Somewhat cautiously, I suggest that this notion may provide a windfall for those analytical psychologists who are wont to talk about 'dynamisms'—a term to which I have always found it difficult to ascribe a meaning, but which, if it means anything at all, must presumably mean something like this.

Note here, in passing, that the foregoing implies also that any psychon system will have a degree of purposivity or autonomy appropriate to its constitution. If need be, we can invoke this to account for the very limited manifestations of these qualities sometimes observed in Apparitions and Ghosts, which, though usually behaving as almost complete automata, occasionally display some feeble degree of initiative. This is curiously reminiscent of the Homeric account of the ghosts in Hades, who led so debilitated an existence that they had to drink blood before they could talk to a visitor.

72. *Repression: Concluding Remarks.* Before considering some of the implications of this view, let me draw attention to one of the many points on which I am at present ignorant and undecided. I do not at present know whether, in order to account for the mechanisms commonly known as 'repression' (not to mention the occasional obtaining of below-chance scores in experimental telepathy, etc., which I conceive to be closely connected therewith) it is or is not necessary to suppose that there may be quasi-repulsive as well as quasi-attractive (associational) forces operative in the psychon system. It seems clear enough that there may exist close-knit and definitely organized systems which it is very difficult to bring to consciousness, as the phrase goes. This does not seem to me to say more than that the chance of their appearance in the field of consciousness is very small; that is to say, the chance of other systems appearing is very much greater; but it is not clear to me whether the impression so often given of, so to say, *active* resistance is illusory and due only to this sort of cause—i.e., the competition of alternatives—or whether some specific repulsive or dissociative force must be postulated. I should much prefer the first view, but it is at least possible that the second may be forced upon us.

I think, however, that it would be both unfair and misguided to allow ignorances of this kind, or even the much more serious ignorance as to how *sensa* are 'generated', or occasioned by the incident stimuli, to prejudice us against the theory as a whole. We cannot reasonably expect to be able to solve every problem all at once; indeed, a theory so complete as to do so might well prove so confusing as to defeat its own ends. The successes of the Newtonian theory of gravitation were perhaps more, not less, easily obtained because the world had to wait another 250 years for the general theory of relativity; and chemists found out quite a lot about chemistry on the basis of 'billiard ball' atoms before the modern paraphernalia of electrons and protons and Schrodinger waves was ever dreamed of.

I believe the theory of the mind in general and of telepathy in particular, which I have advanced in the preceding pages, to be very approximately correct in its main features, though I have little doubt that it will need considerable modification and extensive restatement

before it approaches a final form. This is completely unimportant. What matters is whether it will prove fruitful—whether it will enable us to understand and co-ordinate phenomena which at present appear confused and incomprehensible. Provided it does this, it is a matter of indifference whether it is ultimately 'right' or not, or whether in due course it has to be discarded altogether in favour of something more radical and more comprehensive.

I have already given, in outline at least, a few instances of the way in which it appears capable of rendering queer and apparently disparate phenomena intelligible; and in the third part of this book I propose to attempt to do the same for a variety of facts and problems covering a much wider range. I think it will be found that, although much of what I have to suggest is frankly speculative, the conception of the mind which I have been advocating does enable us to form a much more conspectively view of many matters of interest than we could at all easily do without it.

73. *Proposed course of further Discussion.* It is not very easy to decide how best to arrange the treatment of the various other facts and problems which I wish to consider; for no plan seems capable of avoiding altogether a certain amount of overlap in some cases and of disconnectedness in others. The scheme I propose to adopt is as follows:

First, I shall discuss certain points connected with psychology in general—though of course the whole subject is very closely connected with it and forms a special branch of that science. In particular, I propose to deal with a number of matters arising out of the ways in which psychon-groups may be formed within what is usually called the individual mind.

I shall then devote a few pages to the light which Telepathy, psi-phenomena generally, and the Psychon Theory of Mind in particular, throw on the problem of human survival of death.

Finally, I shall consider various implications and possibilities arising from the way in which individual minds, or psychon groups within them, may become linked up with other systems into larger than individual syntheses. In the course of this division I shall digress slightly to talk about Religion, which seems to fit in here better than elsewhere; and I shall then return to the main thread and conclude with some remarks on Social Systems.

PART III: IMPLICATIONS

CHAPTER X

PSYCHOLOGY IN GENERAL

74. *Physiological Psychology: Behaviourism.* It has been well said, if a trifle unkindly, that "There are many psychologies but no Psychology", and the implied reproach is by no means wholly without foundation. Psychology is certainly a queer subject, but I think its queerness is not only pardonable but inevitable in the circumstances, themselves again inevitable, of its development.

I suppose the popular definition of Psychology would be "the study of the mind" or something very like this; and it is obvious at first sight that special difficulties are likely to arise in studying the mind, by means of which alone you can study anything at all, as compared with studying potatoes, or the properties of magnesium, which at least seem to exist independently of the mind which studies them. Many people must have had an uneasy feeling, and psychologists perhaps not least, that study *of* the mind *by* the mind is altogether too suggestive of a foot-rule trying to determine its own coefficient of expansion without any external standard for reference. Philosophers, who are nothing if not courageous—it is by no means the least valuable of their qualities—have never been daunted by this difficulty, and have rightly not hesitated to extend their inquiries (as indeed they could scarcely avoid doing) to the nature and properties of the mind; and of course they have made many important contributions to the subject, notably as regards analysing the problems to be solved, stating them correctly, and showing that the solutions naïvely given by the plain man will not withstand criticism.

Psychologists, on the other hand—at any rate modern psychologists—despairing of finding anything reasonably to be called 'a mind', have tended to concentrate on *behaviour*, so that Psychology has come to be regarded as concerned more with the question, "Why do people behave as they do?" than with "What are the properties of the mind, and how does it work?" This question they have mostly attempted to answer in terms of physics and physiology—in terms that is to say, exclusively of physical stimuli falling on nerve endings, impulses travelling up nerve fibres, across junctions, and down to muscles, etc., and the effects produced by chemical changes in the body, by the secretions of glands, and so forth. This tendency, greatly strengthened by the successes, prestige and materialistic outlook of physicists, reached its climax in the 'Behaviourist' school,

which at one time exerted a great influence on the subject, and still does so in America, the land of its birth. Few of the exponents of this line of thought were quite so insane as to deny the existence of consciousness, or the fact that they were themselves conscious; but they did contend that they found no need to use the concept in order to explain behaviour, and that it would therefore be misleading to introduce it. All behaviour, they declared, could be quite sufficiently accounted for in terms of 'conditioned reflexes', and so forth; man was but an automatic machine on a very complex scale; his alleged mind was an illusion—not even that indeed; his supposedly profoundest thinking was no more than the operation of "the Language Habit". As Bertrand Russell observes, (52) "It is humiliating to find how terribly adequate this hypothesis turns out to be."

No sensible person will deny that a great deal of this work has been highly valuable. As a result of it we know enormously more than we once did about a great variety of activities and processes of the utmost importance to human life; but the danger has lain in the tendency to maintain that what suffices to account for the part *must* be sufficient to account for the whole. It is quite illogical to argue that because we can account for 99 per cent of a slug's behaviour, and 5 per cent of a man's behaviour, by means of reflex arcs, etc., we should necessarily be able to account for 100 per cent of both if only we knew more about reflex arcs. If we accept this conclusion, and are wrong in doing so, then our attempts completely to explain behaviour in these terms will not only fail, but will become increasingly misleading, so that the oddest and most disastrous results are likely to ensue.

It is perfectly proper, and indeed obligatory, to push physiological psychology as far as it will go, but it is not less important to recognize that there may be a point beyond which it won't go, and to stop when one gets to it. And physiological psychology will certainly *not* go so far as telepathy; so that the psychologist of the future must reckon on the operation of some factor other than the sense organs and nerves and glands with which he has been accustomed to deal.

This conveniently introduces a point on which I should like to touch before going further. The psychologist not infrequently objects to telepathy, etc., on the natural if not very logical ground that, if it be true, then most of his experiments are liable to error and he cannot even rely on the work of the past. If there be telepathic communication between experimenter and subject, he will urge, then all experiments involving the performance of some task (I speak rather loosely) to which the experimenter knows the answer will be void, because the subject's performance may have been determined or influenced by telepathy from the experimenter.

I do not think there is any serious danger here, except possibly in very special cases, for it is all a matter of degree. It might just

as well be urged that all weighings made prior to the discovery of electrostatic attraction and repulsion were invalid, because the scale-pans, etc., may have been electrically charged and thus subject to forces other than the weights of the objects weighed. So no doubt they were, and it is possible that a few very delicate weighings may have been affected to some small extent; but we don't worry about electrostatic charges when we are weighing pounds of butter or even grams of drugs, and there is no indication at present that telepathic effects are likely to exert any appreciable effect in psychological experiments—if only they were it would be much easier to study them.

75. *Mind and Brain.* All this, however, is no more than preliminary. The real question of interest in the context of ordinary psychology is that of the relation of mind and brain. So far, I have written this book almost as if the brain did not exist, and it might reasonably be asked whether I propose to ignore it altogether and contend that it has no part to play in mental life, or, if not, what I conceive its function and influence to be.

It seems to me that in this regard psychologists ought to extend a hearty welcome to the view of the mind I have been advancing, for it should enable them to relieve the overladen brain of quite a number of functions which have been assigned to it, simply because there was no other way of dealing with them and quite regardless of whether that unfortunate mechanism was even theoretically capable of performing the work required of it. Quite apart from its sufficiently complicated job of transmitting sensory stimuli, controlling the body and regulating movement, it was supposed to be the 'organ of thought', the storehouse of memories (in the form of 'traces', etc.) and the 'seat of consciousness'.

In a sense, it was easy enough to relegate all this work of thinking and remembering to the brain. On the one hand, there seemed nothing else to be done with it, so that psychologists said that it *must* be due to the organizational patterns of nerve paths in the brain tissues, or whatever the phrase might be; on the other hand, not enough is yet known about brain cells and their interconnexions, etc., to enable us to set an upper limit to their potentialities and say positively that these can *not* account for the facts. But I am sure that many psychologists must have had uneasy qualms from time to time about the extent to which they were relying on assumed powers of which they knew so little.

On my view, it is legitimate and necessary to transfer to the mind or psychon-system a large part of these functions previously thrust upon the brain.

I do not regard the brain as the seat of consciousness; as I have explained, I consider consciousness to be a matter of the system of 'forces' existing between the constituents of a psychon group. I do

not think the brain has anything to do with it, except in so far as, by occasioning the incursion of *sensa* into the group, it may alter the system of forces.

And I do not think that the revival of pure memory images as such has necessarily anything whatever to do with traces, or nerve paths, or the like in the brain. It seems to me perfectly explicable, in its main outlines at least, by the recall through association of the images corresponding to past *sensa*; though complications are doubtless often introduced by the accompanying excitation of nerve paths in the kind of way to which I shall refer shortly.

As for the brain being the 'organ of thought', I am inclined to say, that on the contrary, one of its most important functions is to save us the trouble of thinking.

Let me try to explain this somewhat paradoxical remark. When we first learn to perform some relatively difficult and complicated process, such as playing the piano, or knitting, we are forced to concentrate closely (I am using colloquial language) on every movement, to think deliberately about what to do next, and no small effort is required to ensure the right movements instead of the wrong; we cannot allow our attention to wander for a moment from what we are doing, or the strangest cacophonies and tangles will result. But a practised pianist can play a familiar piece of music while talking and thinking about something entirely different, and can even read unfamiliar music while talking, etc., provided it is not too difficult. It is only when he wishes to give something better than a merely mechanical performance, or comes to a difficult passage, that he has to recall his attention and concentrate on what he is doing. On a lesser scale the same is true of innumerable actions, from walking or riding a bicycle onwards, which start by being deliberate and thought-about and end by being virtually automatic.

This, it seems to me, is the kind of work that it is the duty of the brain, in its executive capacity,¹ to perform, thereby leaving the mind free to indulge in 'thinking' properly so called. And by 'thinking' here I mean the succession in consciousness of groups of ideas, etc., under the influence of the associative linkages and (we may now say) of any contributions from other minds—and these evidently *might* be very important—that telepathic processes may make. If it were not for this beneficent function of the brain we should be obliged to devote all our attention to the most humdrum actions of daily life and be unable to spare any for more interesting activities.

¹ I deliberately refrain from discussing the brain in its 'receptive' or 'transmissive' capacities. In so far as these are concerned with the pure physiology of the sense organs, etc., they do not concern us here; in so far as they are concerned with the genesis of *sensa*, they are at present wholly mysterious, though Thouless (65) gives a most interesting and valuable account of the way contemporary thought is tending.

There is, of course, nothing new in most of this, for all psychologists would agree about the delegation of functions to 'lower' centres of the brain, and would speak of 'higher' centres being freed for other work; but the suggestion that the mind, while remaining the kind of ordered mechanism that the psychon theory suggests, should be capable of 'thinking' on its own, so to say, and more or less independently of the body, opens up interesting possibilities. There is evidently a limit to the number of discrete objects of finite size (i.e., brain cells) that can be packed into a given space (the skull) and to the number of worth-while connexions that can be made between them; so that, if thought were a matter of these alone, there would be a limit to the number of thoughts a man could think, i.e., to the number of idea-patterns, so to call them, which could form his field of consciousness, though this limit would doubtless be high—as it clearly is. But if there be no limit to the number of associations a psychon can form—and there is no sort of indication that there is one—then there is no corresponding limit either to the content of his mind (the number of linked psychons constituting it) or to the patterns into which these may arrange themselves. In other words, there is no limit either to the amount of knowledge he may make his own or to his thinking, except such as arises from the finite number of sensa and images he may experience in the course of his life or which may otherwise become available to him.

Most of the raw material, of course, is supplied in the form of sensa, and here the sense organs and brain play an all-important part; but we may take it as certain that the stock may be in some degree increased by telepathic linkage with other minds. Moreover, thought may lead to action, and the action to increase of experience, and this again to thought, so that a kind of regenerative effect is produced; thus, to a certain extent, the greater the capacity of the body for varied action, the greater the opportunities of the mind for varied thought. I suspect that it is mainly—perhaps wholly—the limit imposed on the range and variety of experience by the nature of its body and nervous system that is responsible for the low mental development of even the highest animals, not anything to do with their psychon systems. In particular, I surmise they suffer from the virtually complete absence of that experience by proxy and power of creating a kind of experimental situation in miniature which is given us by the power of speech, though I have no idea why it should be evolutionarily impossible (as it apparently is) for animals to develop speech centres. But this is digression.

At any rate it looks as if (assuming the psychon theory of mind to be correct) there need be virtually no limit to the mental development of man arising from the finite size of his brain (as suggested by Wells and others) and that we need not worry, as does Tilney, (67) about whether there is any chance of increasing it.

76. *Possibilities of Mathematical Treatment.* I will now turn to a matter which seems to be of great importance in principle, though at present very little work has been done on it and I can illustrate only by a small and incomplete example. This is the possibility which the psychon theory offers of being able to bring theoretical methods of investigation, notably mathematical, to bear on problems which do not seem amenable to such treatment on any 'brain-cell' theory, or, at any rate, have not been so treated.

Consider the only too familiar process of forgetting.¹ It is a matter of common knowledge that the longer it is since we experienced or learned anything, the less likely, in general, we are to remember it, though of course we may remember some very distant events very vividly. Experiment shows that, when a subject learns a batch of suitable material used, the amount he remembers at successive attempts to reproduce it falls off in a particular sort of way, relatively more rapidly at first and then more slowly.² This is the kind of thing one would expect on general grounds, because all manner of other quantities have been found to decay in the same sort of way. But when one tries to explain it in terms of assumed properties, etc., of nerve paths or the like, it is by no means easy to do so. If one supposes that the ability to remember depends on the preservation of some sort of physical 'trace' in the brain, and that forgetting is due to the gradual obliteration or filling-up of these traces, then one would expect (for example) that the remembering of a relatively long-ago item would be not so much less probable as feeble; and this seems contrary to experience, for we all know how vividly circumstances may recall an incident we thought we had quite forgotten. And if it were a matter of the sudden, all-or-none, breaking of some nervous connexion, then we should expect that an item once forgotten would be for ever forgotten, and this again is contrary to fact. Moreover, Jenkins and Dallenbach(29) showed that the process of forgetting is either suspended or very much slowed down during sleep, so that it cannot be a matter of some steady chemical change taking place, which goes on regardless of whether we are psychologically active or not.

In short, it looks as if (to use a rather crude metaphor) the items were not so much lost or worn out as mislaid; or, better, as if they became increasingly inaccessible, like plums stirred into a pudding.

Now, the position of psychons being constantly brought by association into new fields of consciousness, and thereby linked associatively with other psychons, is not at all dissimilar from that of plums being stirred into a pudding. If psychon E, for example, is first linked only with A and B, say, but later with C and D also,

¹ This account is deliberately simplified at a slight cost in accuracy; it is therefore to be taken as no more than illustrative of the principle involved.

² The particular way it goes is known as 'exponential decline', but the name does not matter here.

and later again with F and G, then the chance of it being followed by A, say, after the first linkage will be one-half; but only a quarter after the second linkage, and only a sixth after the third. That is to say, the chance of getting A when E is presented will gradually decline with decreasing rapidity, which is roughly the same sort of effect (though not quite the same) as we get with the forgetting of learned material, or in my displacement effect discussed on page 31, above.

I do not want to anticipate the results of work which has only just begun, but it already seems reasonably certain that, by making the necessary minimum of plausible assumptions about the associative properties of psychons and the kind of way in which the ideas concerned are likely in practice to be presented, etc., it will be possible to deduce the observed facts of forgetting and displacement effects from these assumed properties, etc., alone. Probably more than one set of assumptions will be found which is capable of yielding the observed result; if so, one will of course try to deduce other consequences than these, and test them by experiment.

This does not sound terribly exciting as stated, but I think it is. It means that we shall be able to investigate the general properties of psychon systems as such, on the basis only of the assumed (and tested) properties of the psychons themselves and of the linkages between them, just as one can investigate the properties of, say, systems of waves, electrical charges, or gravitating masses.

In particular, it should prove possible to investigate the *stability* of psychon systems, and to determine under what conditions they will tend to become more and more close-knit and coherent on the one hand, or to split or sub-divide or disintegrate on the other. The great importance of being able to study this kind of problem theoretically will become apparent very shortly, and I shall have still more to say about it when we come to discuss the meaning, prospects, and probable conditions of Survival.

77. *Psychon Groups within the Mind.* Once the notion of the mind as a system or structure of psychons held together by associative linkages is firmly grasped, a large number of more or less familiar facts begin to drop into place as parts of the general picture; at least, this is true so soon as we realize that some psychons are bound to be more closely linked together than are others, so that groups are formed within the main system.

It is not disputed that repeated co-presence in a field of consciousness will strengthen the associative 'link' or 'tie' or 'force' between two or more psychons, so that if one of these is again presented the other or others are more likely to accompany or follow it than if they had been co-present less frequently. This is all that we mean (and I think all that we *can* mean) by talking about the 'strength of a link'. There may, of course, be other factors which affect the

strengths of linkages, such, for example, as the intensity of the stimuli responsible for any sensa that may be involved; and there can be little doubt that the emotional constituents play an important part, though I suspect that they do so only by providing a greater number of psychons in one part of the group for the others to hook on to, so to say. Be this as it may, the important thing is that groups of ideas, etc., are bound to be formed, and in fact are formed, under the conditions of everyday life.

These groups or systems may, of course, be of almost every imaginable degree of complexity, from very simplest, such as two nonsense-syllables I might learn for the purpose, to the rich mass of images which comes to my mind when the word 'France' is mentioned. It is also evident in principle and as a matter of common experience that they may differ greatly not only as regards numerical size and content, but also in coherence, in their emotional quality, and in the degree of their isolation from the remainder of the total system.

Examples of the kind of thing that happens are common enough, on a mild scale, in the life of almost every one. We have one group of 'interests' as we call them centred round our work, another round our home, a third round our relaxations, and so forth; and it is a commonplace that a man may exhibit very different characteristics in these different contexts. In these cases we may think of the groups of ideas, etc., as held together by their frequent recurrence in conjunction with the sensa given by the actual external situations—the office or factory, the house and family, the golf-links or football field, etc.

We also have 'moods' of cheerfulness and depression, irritability or co-operativeness; here no doubt the environment is again a factor, but the chief constituents of the nucleus are likely to be particular clusters of bodily feelings consequent upon the state of our health.

Usually, each of these moods or different sides to the character, as we call them, will have plenty of connexions with other parts of the total system, and the mind as a whole is reasonably coherent and 'well integrated' as the phrase is. But it seems quite clear that this is not always the case, and that sometimes a group of ideas may become, as it were, exiled, and may set up a semi-independent existence on its own.

There is much work waiting to be done on the precise nature of the mechanisms we must postulate in order to account for this, but I think it is possible to see fairly clearly at least one way in which it might come about.

No one, I think, can reasonably doubt that to recall or think of a situation is at least partially equivalent to being actually confronted with that situation in fact, though naturally the memory or imagining is heavily diluted, so to say, by the sensa of the actual environment;

and to a corresponding extent the mechanisms of the body are activated or adjusted to meet it. This, as might be expected, is especially noticeable as regards the expression of emotional states; it is common enough to hear people say, "I go hot all over (with shame) whenever I think of it," or "The very thought of so-and-so makes my blood boil." To a lesser extent the muscles of the body tend to prepare for action appropriate to the remembered or imagined situation; there is no overt action, but it is as if the body had been given the order, 'Stand by for kicking', or whatever the appropriate action might be.

It is easy to see that actions appropriate to one situation may be the reverse of appropriate to another, and therefore even the feeble preliminary adjustments prompted by one set of ideas may be incompatible with those prompted by another set. It would clearly not be very difficult—indeed, I think it has already to some extent been done—to explain on such lines as these how it might come to be impossible, or virtually so, for two ideas or psychon groups, A and B, to be co-present in the same field of consciousness; and this would give the basis for the building up around each as nucleus of a system isolated from the other. In such a case we might find well-marked alternations of 'A-ness' and 'B-ness'; or, under somewhat different conditions, it might happen that some particular system, X, could not enter the field of consciousness at all, or only very exceptionally.

I suggest that if this kind of process operates only on a small scale, but intensely, we get the 'repressed complex' of the psychoanalysts; if it operates on a wider scale, but less intensely, we get moods, etc.; if it operates both widely and intensely, we may get, according to the particular circumstances, any of the various types of 'dissociation', from the mild and largely controllable version responsible for such activities as automatic writing, up to full-blown cases of 'multiple personality', such as the Beauchamp case, the Doris Fischer case, and others.

78. *Multiple Personalities*. I think I ought to devote a few paragraphs to phenomena of these types for the benefit of those who are quite unfamiliar with them, just to indicate the kind of thing I am talking about, though it would need much more space than I can afford here to give more than a very superficial account of them.

Some quite normal people find that, if they take pencil and paper as if for writing, and sit down and relax their minds, after a time the hand holding the pencil will begin to move without their conscious control, and may write intelligible words or sentences apparently of its own volition.¹ The writing usually purports to emanate from some personality other than the owner of the hand, and, with but little encouragement, to be inspired by a departed 'spirit' or other

¹ The same kind of thing is observable in Planchette, the Ouija board, or the 'glass and letters game'.

discarnate entity of some sort; but there seems no reason to suppose that the immediate operator at least is anything more than a partially isolated fragment of the normal personality—i.e., some kind of a psychon sub-system. In the slighter cases the normal personality may be inappreciably affected, or there may be no more than a somewhat *distract* condition; but at the other end of the scale the person concerned may pass into deep trance, as in one phase of the career of Mrs. Piper, the celebrated medium. This kind of thing is known as 'automatism', because the activity in question (e.g., the writing) appears to be automatic in the sense that the normal personality does not know what is being written and cannot control it.

Another form is that of automatic speech, which may range from 'inspirational speaking', with the speaker in a normal state or nearly so, but not in full control of what is being said, to the full trance states commonly associated with spiritualistic 'mediumship'.

These two forms of automatism have provided most of the evidence adduced in favour of human survival of death, because (as is well known) the writings or utterances often contain information which, on the face of it, could not be known to the automatist, but is characteristic of some deceased person. The serious literature of the subject, notably the *Proceedings* of the English and American Societies for Psychical Research, is crammed with elaborate and intensive studies of these cases, mainly from this point of view; but I am only concerned with them here as instances of mutation of personality without reference to the possible origin of some of the remarks made.

In all, or nearly all, these cases, it will be understood that, although the content of the writing, etc., is not controlled by the automatist, the starting of it, or the onset of the trance, is a matter of deliberate decision in the ordinary way.¹ But there is another class of case, obviously not wholly dissimilar, in which, either as the result of an accident or other shock, or for no apparent reason at all, the whole personality may suddenly alter, sometimes in a very marked degree. Sometimes there is a more or less complete loss of memory up to a certain point in the person's life and a new personality is, so to say, built up from the point at which memory ceases; sometimes two or more distinct personalities alternate, and these may not only differ, but may actually be antagonistic to each other. In these cases it is rare, though not altogether unknown, for the secondary personality to claim to be other than the owner of the body, or to produce 'communications' purporting to come from a discarnate source. Again, there is an extensive literature, and I do not propose to go into details here.

¹ I have, however, known one case in my personal experience, and they are not uncommon, where the urge to write automatically became so strong as to make the victim get up in the middle of the night to do it. I mention this merely as a warning to any who may light-heartedly embark on such activities.

79. *Apparent Demonic Possession.* It is evident that this kind of case easily could be, and probably was, largely responsible for the belief in demonie 'possession', and in this regard it seems to me to link up very intimately with the extremer cases of moods. I do not think that any one who has closely observed a well-marked case of pathological jealousy, for example, could doubt either the essential continuity of moods with secondary personalities, or the naturalness of speaking of 'demonie possession' in such cases on the part of any one who had the concept of demonic possession at his disposal. I shall have more to say about this later, for it leads to very important considerations; but I must leave it on one side for the moment.

My own view is that all these various mutations of personality, from minor automatisms to mediumistic trance states, and from the lesser variations of mood to full-fledged secondary personalities, are of the same basic nature and origin, namely, that all arise from the operation of a smaller or larger, less or more isolated, sub-system of psychons within the main system which makes up the mind or personality as a whole. The great and varied differences between them will depend on the nature and number of the psychons forming the sub-system, on the closeness of their linking, and on the degree of their isolation (i.e., on the number and nature of their direct or indirect linkages with the remainder of the total system), and not on any fundamental difference of kind.

Thus the psychon theory of mind provides us with the means of dealing with a wide range of phenomena which it is extremely difficult to discuss at all usefully in terms of physiological psychology.

Let us turn back to the demons. Unsophisticated man would say, "So-and-so is possessed by a demon"; we profess not to believe in demons, but we might very well say, "So-and-so behaves *as if* he were possessed by a demon". This, however, tacitly presupposes that there are such things as possessive demons and that we are conversant with their properties; otherwise we might as well say, "So-and-so is glubbed by a twink", or any other form of meaningless words. And few people to-day would admit the existence of independent entities equipped with horns and tails and the other insignia sported by the well-dressed demon of tradition. It might be objected here that this proves that such remarks *are* meaningless and unworthy of further discussion; but I think this might cause us to miss a point worth making.

It is not the horns and tails that are the relevant properties of demons, but their malignant propensities, which cause their victims to behave in violent and irrational ways. But we have just decided that it is a particular sort of psychon sub-system that does this. That is to say, such a system has all the relevant properties of the traditional 'demon' or 'evil spirit', and may therefore be logically substituted for it, so far as the behaviour of the victim is concerned.

Apart from the horns, hoofs, etc., which are wholly irrelevant, it fails to replace the traditional evil spirit or demon only as regards the features of (a) occasional perceptibility, (b) existence independently of any mind, and (c) permanence.

As regards the first, I see no reason why very disagreeable psychon systems, largely compounded of psychons representing hate, greed, jealousy, rage, etc., should not become closely associated with particular persons or places, in much the same way as I have suggested is the basis of 'haunting'; if so, they will tend to be called up by the sight of these places, etc., in much the same way as those forming apparitions or ghosts, and there seems no special reason why, provided they were accompanied by visual images in the first instance, they should not sometimes be eidetically externalized. This would account for a good deal of the folk-lore, etc., of the subject, and for some of the stranger remarks of occultists, without requiring us to write them all off as unqualified nonsense.

The question of permanence is evidently to a great extent a matter of the stability of the system, of which I shall have more to say later. The transient moods of everyday life, no two of which are quite alike, can hardly be said to have any stability or permanence at all; whereas recurrent states closely resembling each other on successive appearances, such as the trance personalities of mediumship, etc., clearly have both in considerable measure. It looks, therefore, as if the essential difference, if any, between the psychon group and the demon of tradition is one of independent existence or autonomy.¹

This raises an exceedingly important question which I want to discuss with some care, both for its own sake and because of its bearing on other matters to be discussed later.

80. *Non-insulation of 'Individual' Minds.* Until comparatively recent years our attempts to think intelligently about the human mind and its relation to the rest of the universe—one might almost say 'about human beings and their relation, etc.'—was handicapped by the almost universal acceptance of the view that the so-called individual mind, character, or personality was an essentially self-contained entity—highly complex and variable, no doubt, but none the less of a kind which it was appropriate and indeed necessary to think of as a *unit*. Your mind, despite the magnificent efflorescences of its nobility, was one unit; mine, despite the nastinesses of its hidden recesses, was another unit; that queer tangle of illogicality that misleads poor Jones was a third unit; and so forth. And communication between them was possible only by the roundabout methods of speech and writing, etc.

This view is fast vanishing, never, I think, to return. Study of

¹ All that I have said in this connexion applies equally, of course, to benign ('angelic') conditions, etc., as to malignant.

the kind of phenomena I have just been mentioning, together with the whole of the work of the psycho-analytic schools, makes it perfectly clear that, whatever else the so-called individual mind may be, it is certainly not unified and only sometimes even decently unitary. At the best it seems to be much more in the nature of a federation of semi-autonomous republics, with all too many clamorous minorities into the bargain, than that serene and sovereign state with which we prefer to compare it. I think there can be no doubt at all about this.

On the other hand, it is obvious that, the moment we accept Telepathy as a fact, and any theory of it which does not place it on precisely the same level as speech or writing, we are at once breaking down the walls of the watertight compartments once thought to separate one mind from another. If an idea which is 'accessible to' my mind (i.e., a part of it) is rendered accessible to yours by virtue of its association with a K-idea common to both, then that idea becomes a part of your mind as well as a part of mine, and it is no use talking any longer about our minds being altogether separate. It may be perfectly true that the linkage may be very slight and tenuous compared with the linkages which bind together the constituents of your mind and mine respectively *inter se*, but that is not the point. The point is that 'separateness' and 'individuality' henceforth cease to be discussable in all-or-none terms, and become matters of degree. The degree will depend, presumably, on the number of constituents in our two minds linked with effective K's, and this as a rule will be (indeed, manifestly is) small compared with the number and strength of the internal linkages;¹ but the conclusion seems unescapable that, in principle, precisely the same *kind* of relationships subsist between different individual minds as between the sub-systems of what we call the same mind.

Let us get this clear. I suggest that Mind in general consists of the whole aggregate of all existing psychons; that individual minds consist of relatively large and closely associated clusters of these gathered around certain nuclei; and that the moods, secondary personalities, etc., said to be within an individual mind are essentially similar, but, generally speaking, smaller and weaker clusters grouped around other nuclei.

Moreover, any psychon system or aggregate, large or small, within a mind or between minds, will possess precisely that degree of autonomy and independence, intelligence, purposivity, and so forth as is in fact given by the nature and inter-relations of its constituent

¹ I have inserted the word 'effective' before 'K's' in this sentence in order to evade the necessity of discussing why there is not a greater degree of apparent unity than there seems to be. This would take us too far into purely technical matters, but I think it will be found to be roughly the kind of 'cancellation effect' I had in mind when I spoke of the effect of being able to hear every one talking at once being precisely equivalent to hearing nobody talking at all.

psychons, and by the nature and extent of their linkages with other systems, and by nothing else whatever.

I know I have said this before, but I make no apologies for saying it again, because I believe it to be a key of profound and fundamental importance to the whole of our understanding of a host of major problems.

If these contentions be not nonsense, it becomes idle to argue about whether a 'demon' or 'angel' is, or a 'psychon system' is not, *of its nature* 'independent' or 'autonomous'. The question is whether, as a matter of fact, the psychon system (which we have seen will do all the work we could ask any traditional demon or angel to do) is or is not more closely linked with the individual mind from which it originated than are individual minds in general with each other. In most, if not all, cases the answer is presumably that it is; but I do not see any reason of principle why it necessarily should be.

81. *Mediumistic Controls*. Bearing these considerations in mind, let us turn to a more interesting case of the doubtful independence of a psychon sub-system.

When a spiritualistic medium goes into trance, she becomes 'controlled', as the phrase is, by some personality other than her normal one, which usually represents itself to be the surviving 'spirit' of some once-living human being, though sometimes just a 'discarnate entity' with no mundane antecedents. These 'controls', as they are called, purport to act as intermediaries between the inquirer (quaintly known as the 'sitter') and the supposed 'spirit' (e.g., of a deceased friend or relative) with whom he seeks to communicate, or who is alleged to seek communication with him. The fact that they often give themselves very odd names, and make even odder remarks is not relevant to the present discussion, which is concerned with them solely as psychological manifestations. Well-known examples of unimpeachable integrity¹ are the 'Phinuit', 'Rector', and 'Imperator' of Mrs. Piper's trance states, Mrs. Leonard's 'Feda', Mrs. Garrett's 'Uvani', and Mrs. Warren Elliot's 'Topsy'.

Now, between spiritualists and their critics there has been (I need hardly say) extremely violent controversy on the question of whether these controls are or are not the discarnate entities they profess to be. Leaving on one side, as is proper, the fanatical ignoramuses of both parties (i.e., about 95 per cent of the disputants), I think that most serious students of the subject would agree that the evidence strongly favours the view that these 'controls' are in the nature of secondary personalities of their mediums, with little or no claim to independent existence as ordinarily understood. Speaking for myself,

¹ By this I do not mean that the 'controls' are necessarily what they purport to be, but that there is no question as to the *bona fides* of the ladies in whose trance states they appear.

I thought (and still think) I had pretty well clinched the secondary-personality part of this view, in the case of Feda at least, by some experiments on trance personalities I did a few years ago. (9) Cutting a complicated story to the bare bones, the way this kind of experiment is worked is roughly as follows: You give your normal medium an ordinary word-association test, that is to say, you call out one by one a list of a hundred words, and instruct her to reply to each as quickly as possible with the first word that comes into her head; you note the replies, of course, but particularly you measure with a stop-watch the time that elapses between your calling out the word and her reply (i.e., the 'reaction time'). You do this on several occasions, so as to get good average reaction times. There is reason to believe that prolongation of reaction time beyond the average is an indication that the word called out has struck a group of ideas of more than usual emotional interest to the victim, i.e., a 'complex' or something of the kind, so that, if you exclude from your list, so far as possible, all words of universal emotional interest, your set of times will be more or less characteristic of the subject's mental make-up.

You do the same thing with the medium when in trance and with the 'control' in possession, and obtain another set of times. You then compare the two sets.¹ Obviously, if the control gives substantially the same reaction-time pattern as the normal medium, you will conclude that he or she is no more than the medium thinly disguised; whereas if the patterns were no more than randomly related, you would feel that the control's claim to independence had received some measure of at least permissive support.

Now, when I tested Mrs. Leonard (normal) and Feda in substantially this way, I obtained a very odd and unexpected result. Feda's reaction times did not show what the mathematicians would call a significant positive correlation with those of normal Leonard; that is to say, Feda did not tend to give extra long and short times on the same words as those on which Mrs. Leonard gave extra long and extra short; nor were the two sets randomly related, as those of two quite different people might (ideally speaking) be expected to be. Queerly enough, Feda's times tended to be long when Leonard times were short, and short when Leonard times were long. To use a homely illustration, they were related more or less like the irregularities on the two halves of a broken biscuit. And this, I think, is even stronger evidence that the Feda personality is *not* independent

¹ I am confident that this general type of investigation, namely applying suitable batteries of psychological tests to normal and trance personalities is basically sound and capable of wide and fruitful applications. The experiments referred to here, taken as a whole, were something of a fiasco, mainly owing to my own statistical ineptitudes; but I think there is little doubt as to the soundness of the particular conclusion concerning Mrs. Leonard and Feda in which alone I am interested for present purposes.

of the Leonard personality than if they had shown a positive long-to-long and short-to-short correspondence in the obvious way. It would not be terribly difficult to cook up a reasonably plausible story to the effect that the personality of Mrs. Leonard might 'impose' its own pattern on Feda's personality supposed to be working 'through' it; but I'll be blest if I can see how it could contrive to impose the converse or mirror-image of itself, so to say, on anything at all!

I therefore concluded, not, I think, without reason, that Feda was only a secondary personality of Mrs. Leonard. I still think she is a secondary personality, and I don't believe she has ever been nearer India¹ than one of Mrs. Penny's amiable novels; but I am no longer so sure that the word 'only' should be used quite without reservation.

Feda is certainly a perfectly good psychon system, with fairly well-defined characteristics—amiability, co-operativeness, etc.—though of a rather childish type. I have no doubt at all that she has been 'budded off', so to say, from the main structure of normal Leonard by mechanisms closely akin to those of Freudian repression, and is therefore truly a secondary personality. But it seems to me possible that a question of the form, "Is Feda a 'real person' or only a secondary personality?"—which is the way in which it would usually be put—may be a false question not to be met by a Yes-or-No answer. She might perfectly well be, in a sense, both. The proper question, I suspect, would be more on the lines, "If the linkage of the Feda system with the normal-Leonard system were reduced to the level of that between ordinary 'individual minds', would Feda be capable of carrying on on her own?" I should think, myself, that the answer here would be "No"; but, if it is, then it is because the Feda system is deficient in whatever constituents or relationships are needed to give stability to a psychon system, not because there is anything inherently 'unreal' in a system formed in this way rather than in any other.

The notion at least opens up interesting possibilities.

82. *Interim Discussion.* I fear the reader may well have felt that the last few pages have been altogether too speculative. I would not agree, because I think that even the boldest (I will not say 'wildest') speculations are quite in order, provided we clearly realize that they *are* speculations and not assertions of fact; and I would be quite content to leave it at that. But I think it worth while to try to make quite clear here just what has been my motive behind all this rashness.

I most emphatically do *not* want to repopulate the psychic hinterland with angels and devils and assorted spirits and all the menagerie of superstitious monstrosities which science has been carefully eradicating for the last couple of centuries or so, though I must

¹ She purports to be a young Indian girl, deceased.

confess to thinking it possible that we may find, in considerations of the kind I have advanced, a reasonable basis for and explanation of persistent legends and the like not easily dealt with by mere mockery and denial. Still less, if possible, do I want to suggest that automatists and mediums are perpetually cluttering up the psychonic world with their dissociated mind-spawn—I should think it most improbable. But I do want to drive home the point that, if we concede (and I see no way out of it) that *sensa* and images are real things, and that they may be linked into groups of greater or less coherence, etc., by associative bonds (and other forces, if any), then questions which assume the clear-cutness, yes-or-no-ness, all-or-noneness of minds or personalities cease to be apposite and may become, for this very reason, actively misleading. If the kind of view I have been propounding is anything like correct, then the psychical working unit, so to speak, is not the mind but the psychon, much as the chemical working unit is the atom or radical and not the complex substance. And if we go on thinking in terms of 'minds' as units, we are likely to go as far astray as the early philosophers who tried to deal with substances in terms of the four elements of Earth and Air and Fire and Water.

I shall now turn to the problem of Survival of Death, which in certain respects occupies a position midway between the 'dissociative' phenomena of the mind I have just been discussing and the 'agglomerative' or 'co-sociative' phenomena—group minds and the like—to which I propose to devote the last part of the book.

CHAPTER XI

THE PROBLEM OF SURVIVAL

83. *Inversion of the Classical Treatment.* If I were attempting a discussion of the Problem of Survival in the classical manner, I should proceed as follows. I should begin by marshalling the evidence for survival, with examples, in ascending order of cogency. I should then—or perhaps concurrently—discuss the alternative hypotheses by which it might be explained away; in particular, I should pay great attention to Telepathy and its ramifications, aided maybe by a little clairvoyance and precognition, carefully considering whether any combination of these is sufficient to account for all the evidential facts, or whether there is a residuum not to be explained in this way. And I should end with a piece of judgematical fine writing in which I should nicely weigh the *pros* and the *cons* and conclude that, on balance, the weight of evidence justifies a provisional belief in man's survival of death.

If I did my work well, the reader would be left with his belief in survival somewhat strengthened, or his disbelief somewhat weakened, as the case might be; but in either event (unless he were an immovable extremist) he would feel himself to be holding a somewhat undecided opinion on a quite definite issue.

I do not propose to adopt this course, partly because I have not the space available to give even an outline of the evidence, but mainly because I consider this kind of attitude to be exactly the inverse of the proper one. The proper attitude, I consider, is not one of doubt as to a definite issue, but of virtual certainty on an *indefinite* issue; that is to say, I have (humanly speaking) no doubt at all that, in some sense and in some degree, man survives death; but I am not at all sure about the sense and the degree, or about what survival means or how permanent it is. I shall try to explain this somewhat cryptic utterance below.

Any one who has studied the subject knows (and no one who has not is entitled to express an opinion) that the evidence for survival is extremely copious, and that some of it is extremely strong. Much, of course, is very bad—so bad as to be barely worth considering—and it unfortunately happens that most belief in survival, other than that derived from religious faith or blatant wish-thinking, is based on evidence of the worst type, such as is obtained at uncritical and emotion-ridden spiritualist séances; but this naturally does not impair the value of the better varieties.

These range from the simple and circumstantial evidences of identity—items of information, etc., known to the supposed 'spirit'

communicating, but not to the medium or automatist—to the exceedingly complicated cases, such as Cross Correspondences and Literary Puzzles¹ to which members of the Society for Psychical Research have devoted years of patient and highly critical scholarship.

I think there can be no doubt at all that this mass of evidence is totally inexplicable on the basis of knowledge acquired in normal ways by the automatists and mediums concerned. This is generally agreed among students of the subject, and discussion has almost entirely centred on the question of whether it can be explained by telepathy in sufficiently complex ramifications. Some of it obviously can be. If I go to visit a medium, it is inevitable that the ideas of death and bereavement should be fairly prominent in my mind, and these will be associated with others connected with deceased friends and relatives and their history and circumstances; thus the 'idea of death', etc., will be quite competent to act as a K-idea between me and the medium in the ordinary way, so that her 'control' personality may well pick up and reproduce as an evidential 'message' some item known to me and more or less characteristic of some deceased friend. I need not go into details.

To account for the more complex cases on these lines will evidently be very much more difficult, and many students have thought it virtually impossible. They may be right, but my own strong opinion is that discussion on these lines is bound to be inconclusive. If we assume the possible operation of telepathy and precognition, as we certainly must, I think it will be found literally impossible even to devise, let alone obtain, evidence which would be completely invulnerable to a suitable combination of the two. In other words, I think it is almost complete waste of time to try to form an opinion about whether survival is a fact in nature by a process of pitting the evidence in its favour against the alternative explanations afforded by telepathy, etc. This is not to say that the evidence is valueless, or that the labours of those who collected it were in vain. On the contrary, I think that it has been immensely valuable in directing our attention to all kinds of problems, and that, like the 'spontaneous phenomena' discussed earlier, it will prove still more valuable as a source of information when we come back to it with greater understanding and a revised perspective. My contention rather is that the perspective implied in this frontal assault on the problem is, in fact, all

¹ The essential feature of this type of evidence is that *fragments* of a complex communication are given through two or more carefully isolated automatists, which only 'make sense' when put together; or sometimes not until a clue is finally given by the ostensible originator of the communication. A degree of apparent planning and purposivity is often shown which it is difficult to attribute to any secondary personality of an automatist, and still more so to a combination of such personalities.

For details the reader must consult the *Proceedings* of the Society; but excellent summaries are given in H. F. Saltmarsh's *Evidence of Personal Survival from Cross-Correspondences*, Mrs. Richmond's *Evidence of Purpose*, and Kenneth Richmond's *Evidence of Identity*, all in Bell's Psychical Experiences Series.

wrong, though it was natural and indeed inevitable in the circumstances in which the subject developed.

My point is this—that to argue about whether the evidence for survival is explicable in terms of telepathy, etc., is to put the cart before the horse, to strain at the gnat after swallowing a gigantic camel, or any other metaphorical cliché you prefer. Roughly speaking, survival is a spectacular issue, but not a crucial issue; it is telepathy that is crucial though it may not be spectacular. Lightning is spectacular, but it was the attractive properties of rubbed amber which broke across the frontiers of the push-and-pull mechanical world and opened up that of electromagnetic phenomena generally; and it is the fact of telepathy (unless you can explain it in physical terms—which you can't) that breaks across the frontiers of the physical world and opens up the psychical.

I do not think I would care to go so far as to say that to establish telepathy, which is physically inexplicable, automatically implies survival, though it certainly breaks the backbone of the essential argument against it, namely, that there is no 'reality' other than the physical. But if the association theory of telepathy and the psychon theory of mind be accepted, survival of some sort becomes at least an entirely legitimate supposition. We have already seen that *sensa* and images (psychons) are the most 'real' things we know, for it is only by them that we know anything at all; the facts of telepathy and precognition show that they are not subject to the limitations of matter, space, and time as are material entities; hence, since physical law is irrelevant, there is no reason to suppose—but if anything the contrary—that dissolution of the body necessarily involves dissolution of the corresponding psychon system.

Thus, apart from acting as a source of information *about* survival (which is very important), the function of the evidence on the subject is not to demonstrate that survival does occur against a contention that it cannot, but rather to indicate whether it does actually occur in a context such that it perfectly well *may*. That is to say, given telepathy (particularly on my view of it), it is no longer a matter of arguing about the possibility of survival and considering telepathy as an alternative; for the occurrence of telepathy has itself ensured the possibility, by bursting the ring-fence of matter and energy within which materialists have sought to confine us. I think this will become a little clearer when we have considered the next aspect of the subject that I wish to discuss.

84. *The Meaning of 'Survival'*. As I have already implied, it is all too commonly taken for granted that there is no doubt about what we *mean* when we affirm or deny the proposition that man survives death, and our doubts are reserved for the question of whether it is true; whereas my own view is that doubt should be concentrated on its meaning rather than on its truth.

We are too apt to assume that when we ask, "Has Jones survived death?" we are asking the same *kind* of unambiguous question as when we ask, "Has Jones survived shipwreck?", and I do not think that this is by any means necessarily the case. The question about surviving shipwreck is quite unambiguous, because we know from experience that (quibbles about 'suspended animation', etc., apart) bodily survival in such circumstances is a yes-or-no, all-or-none affair; there is no half-way house between survival and non-survival—the man is either alive or is drowned. But we have no such empirical experience to guide us in the matter of the mind's (or 'soul's') survival of the death of the body; and in demanding a yes-or-no answer we may be demanding what cannot be given.

As I have pointed out elsewhere, (10)¹ it may be that when we ask, "Does man survive death, or is he annihilated?" we are posing to nature an impossible question proceeding from a too-naïve application of analogy, and that there is in reality no true antithesis of the kind we assume. To condense from the lecture just referred to: If we ask, "Is an electron a wave or a particle?" we think we are asking an unambiguous question, for we are familiar enough (we would say) with the properties of particles and of waves, and there would seem to be no possibility of confusing the one with the other. This is because, in everyday life, we invariably find certain properties of particles accompanied by all the others—and the same, of course, for waves—and we assume that these concomitances must be universally true, so that all can be inferred when some are noted. "But Nature cares nothing for such inferences, and when we ask *her*, 'Is an electron a wave or a particle?' she can only return the somewhat disconcerting answer, 'Neither—but both!' " It is at least possible that to pose the question, "Does man survive death, or is he annihilated?" may be to express a similar false antithesis, and that Nature's answer may similarly be, "Neither—but both!"

The essence of the whole matter, I think, is that we cannot give a yes-or-no answer to the question, "Does man's mind survive death?" unless we conceive of a mind as a kind of indivisible unity which must either survive as a whole or perish as a whole; and, as we have seen, an 'indivisible unity' is quite certainly the one thing which a mind, on any theory, most emphatically is *not*. We must accordingly resign ourselves to the prospect of our inquiries yielding, in principle, no more than conditional, or graded, or quantitative answers.

85. *Stability of the Psychon System as the Determinant of Survival.* To bring this long preamble to a close and get to the heart of the matter. The mind is a psychon system, and the question of whether any particular mind survives death is one of the stability of that system under post-mortem conditions, notably as regards the sudden

¹ Cf. also Saltmarsh. (55)

cutting off of the normal influx of *sensa* occasioned by the incidence of physical stimuli on the sense organs. This, it seems to me, is a purely technical problem of the same essential character as the stability of astronomical systems, chemical molecules, or radio-active atoms, and capable of solution by the same kind of methods.

Note here that we have already surmounted, without even noticing it, the most formidable of all the obstacles that confront the survivalist, namely, that of saying *what* it is that survives when the body perishes—it is the psychon system. The same real entities which we have found so useful in discussing telepathy, apparitions, secondary personalities, etc., now form the basis of our views on survival. It is true that, in a sense, we are but exchanging one sort of difficulty for another; but those that now confront us are of a relatively familiar kind, inasmuch as they are concerned with the behaviour of entities with known (or postulated) properties related in specified ways. That is to say, they are problems to which appropriate mathematical methods can, in principle, be applied; and wherever this is the case we can feel assured that progress will not be very long delayed.

The kind of way in which these problems will have to be tackled is as follows: We shall start by assuming the existence of entities (psychons) having no relevant property other than that of associability, and the strengthening of this by repeated co-presentation. We shall then see whether certain simple phenomena, such as the forgetting curve, can be successfully deduced from these assumptions. If they can, well and good, and we will go on to other deductions and test these against the facts in their turn; if not, we shall alter, or possibly add to, our assumptions till we have found a set which works so well that we may be reasonably sure they are correct and that we have not omitted any of importance. We shall next try to define what we mean by 'stability' in this context—which should not be too difficult—and inquire what kind of system will possess it, if composed of entities having the properties we have thus assumed and tested. This inquiry will evidently have to include the effect on the system considered of any linkages it may have with other systems, just as a study of the stability of, say, a planet and its satellites would preferably include consideration of the effects likely to be produced by the close passage of another planet or system. Finally, we shall check up our conclusions with whatever observational data are available.

It would naturally be worse than rash to anticipate the results of such inquiries; but I think it is legitimate, if only as a matter of interest, to indulge in a certain amount of speculation as to the kind of way they are likely to work out—on the even stricter understanding than usual, if possible, that the views suggested are no more than conjectural. On the other hand, I think it is not difficult to indicate possibilities which, if not particularly gratifying, are at least more

plausible on general grounds—that is to say, more consonant with what we know of natural phenomena as a whole—than those advanced by the extremest spiritualists on the one hand or the orthodox religionists on the other.

Broadly speaking, I should expect to find that close-knit and well-integrated systems of large numerical extent (i.e., composed of large numbers of manifoldly inter-related and closely associated psychons) will prove to be highly stable, and vice versa; but I will defer for the moment the question of what is likely to happen in the case of loosely-knit and ill-integrated systems. Given such a well-ordered system, e.g., that of a normal adult, I should expect that at the moment after death it would be very much the same as at the moment before it. The actual process of dying may be supposed, it is true, to introduce a certain number of more or less characteristic *sensa* and images, but I find it difficult to suppose that these will, in general, have very much effect on the system as a whole. After all, most of us experience fairly severe illnesses or accidents at one time or another, and may even be knocked unconscious, and so forth, without suffering any very profound disturbance of the mind. Probably the surprise or shock of realizing that one is dead will be the most serious factor in the majority of cases.

This supposition accords well with (for what they are worth) many communications which stress how the deceased person ‘could not believe he was dead’, ‘felt just as he did before’, etc. Its natural implications, followed up without undue regard to romantico-religious fantasy, are not without interest. If you are killed while doing something in which you are intensely interested, your mind will be full, as we say, of that activity—that is to say, the images representing it will all be much more closely linked with your contemporary *sensa* than will those representing activities, etc., of lesser interest. But—and this is very important—it is clear that the brake normally applied by the influx of *sensa* from the physical world, which usually hold our noses so distressingly hard against the mundane grindstone, will be suddenly taken off; so that there will be nothing by which to check our fantasies—at any rate in the first instance. Thus, whatever we *imagine* will be ‘*real*’ to us until we learn to recognize it as imagination.

86. *Probable Effects of Perseveration.* This enables us to understand the apparently ridiculous statements of a crassly material character which have so often stirred the mockery of the critics. Consider, for example, the classical example in the late Sir Oliver Lodge’s *Raymond*. (32) The ostensible communicator,¹ Sir Oliver’s son killed in action during the last war, declared that soon after his death he was taken along and given “a whisky and soda and a cigar”.

¹ Henceforward, to save trouble, the words ‘ostensible’, ‘alleged’, ‘supposed’, etc., should be understood as qualifying all remarks of this kind.

This remark, published by Sir Oliver with characteristic honesty and courage, was greeted with hoots of derision by the sceptics; but I think this was due much more to the strength of their preconceptions than to any inherent absurdity in the occurrence. Put it like this: If you are a normal man and find yourself, for any reason, able to ease off in the middle of a battle, your thoughts naturally turn to the chances of getting a drink and a smoke—at least, those of very many men would. That is to say, you ‘think of’ these things and imagine them, i.e., images of whatever drinks and smokes you normally indulge in arise in your mind; indeed, it is a matter of common experience that this happens even when there is no chance of getting them. So long as you are pent in the body these images remain recognizable as such by contrast with the insistent *sensa* coming in from the outer world; but if these *sensa* are cut off the images will (presumably) greatly gain in vividness and become indistinguishable from ‘reality’, for the simple reason that they will themselves *be* the only ‘reality’ available at the moment. Thus, up to a point, at any rate, imagining the drink you long for will be indistinguishable from having it actually before you. More generally, in the absence of checks, supplied through the sense organs, from a material world conforming to the laws of physics, the objects and events of imagination will constitute the ‘real’ world, just as they do in dreams.

I hope I need hardly say that I hold no special brief for the veridicity of remarks of this kind, and that the last thing I wish to suggest (but very much the contrary) is that everything said by an entranced medium which purports to come from a deceased person is to be taken at its face value. But I do put it to you as a matter of plain common sense: Which seems the more plausible—that a man killed in battle should enjoy and report the experience of drinking a whisky and soda (which he probably badly needed), or that he should report being led off by a celestial quarter-master to be fitted with a pair of wings?

It seems to me to be just one of those queer little unexpected points which so often are especially illuminating.

Similar considerations apply to such statements as those to which a certain amount of publicity has recently been given about deceased fighter-pilots continuing to fly with the ‘astral’ R.A.F., escort bombers, etc. I should consider this kind of thing to be a simple matter of what is technically called ‘perseveration’. Almost every one is familiar with this, I suppose, in one degree or another—when some activity in which one has been indulging for a long time or to excess (e.g., driving a car for many hours on end) continues persistently in one’s mind after one has stopped doing it, and particularly may continue in sleep, or especially in states bordering on sleep. The relevant images recur again and again, and one cannot

get rid of them. It seems to me that in the case of a keen pilot, whose thoughts have probably been almost exclusively of fighters and air-fighting for months on end, this sort of thing would be extremely likely to recur; he would be likely to continue in imagination after death just those activities which he had pursued in actuality during life; and, if he had not learned to recognize his images *as* images, he would report that he really *is* going on flying and fighting. What else should he do?

There is nothing at all absurd about this; these people are simply experiencing perseverative dreams—just as we may do in similar circumstances when cut off from the physical world in sleep, temporarily as they are permanently. What is absurd is to suppose that such statements do not need interpretation or any reflection about what is likely to be going on, but are to be taken at their face value as affirming the existence of a quasi-material ‘astral’ world containing whisky, cigars, aeroplanes, etc., *having the same properties* as these objects possess in the mundane world we know.

87. *The Post-mortem World of Images.* Out of all this, several points of interest and difficulty arise. Since, by hypothesis, there can be no *sensa*, we must suppose that the next world is a world of images. Are we then to conclude that it is vague, shadowy, diaphanous and lacking in vividness? I do not think so. I very much doubt whether it is, so to say, inherent in the nature of an image to be vague and unvivid. Some people report that their dreams, and even their day-dreams, may be as vivid as the occurrences of waking life, though I have never found mine to be so. Eidetic images seem to be as vivid as *sensa*, and there is some reason for supposing that this type of imagery is more primitive—i.e., more the original and natural type—than that which we usually experience; without going into details, I suspect that the comparative faintness of normal imagery is due rather to lack of concentration—i.e., the effect of competition between images in the field of consciousness, and consequent distraction—or something of this kind, than to anything in the nature of images as such. Moreover, it seems clear that apparitions, the seeing of which is certainly not due to stimulation of the seer’s retina, may be every bit as vivid as ‘real’ (material) objects. I think I should accordingly expect the psychical world to be just as vivid as the mundane, though I should not care to be dogmatic on the point.

Next, I have spoken of the difficulty of recognizing images *as* images in the absence of anything else against which to check them, or words to this effect. Will this difficulty remain insuperable, or shall we learn, and how? I think the answer is fairly clear in principle, though obscure in certain details.

When we have an hallucination we do not recognize it as such, but continue to interpret our experience as being of a material object

(otherwise it would not be an hallucination) until we find that it does not exhibit the properties which a material object would. We may mistake the apparition for a material person until we find that we experience no sensation of touch when we put out our hand in the way which ought to produce a tactile sensation if the visual experience were originated by a material object; that is to say, until the normal sensum-sequence is interrupted. If the sequence were never interrupted, if the apparition exhibited all the properties of a material object, then there would be no meaning to be attached to the statement that it was 'only an hallucination'. Conversely, if we had no previous experience of material objects, there would be no grounds for expecting one sensum-sequence rather than another, and anything imagined might have any properties whatsoever. It is only the memory of past events (senum-sequences) which enables us to expect contemporary events to take one course rather than another.

But memory does do this, and the surviving mind (psychon system) of our deceased pilot—to continue with this example—will certainly contain plenty of memories of the way in which material aeroplanes behave; if a wing is shot off, they fall; if you crash one in landing, it will not fly again till it has been repaired; and so forth. But the imaginary aeroplane does not behave like this; you can fly with one wing or with no wings at all; you can crash it in imagination as often as you like, and be flying again the next instant. It seems to me extremely plausible to suppose that after a while this unprecedented behaviour will strike the pilot as distinctly odd, and that he will begin to say to himself, 'I must be dreaming', and begin to adjust himself to the situation. In other words, memory images, and memories of sensum-sequences, will serve perfectly well as a basis for recognizing the non-materiality (I do *not* say 'unreality') of the imaginary objects and events.

But what applies to exhausted warriors and fighter-pilots will presumably apply, *mutatis mutandis*, to other people. One might broadly say, "Where your thoughts have been, there will you find yourself". If you expect wings and harps, you will get wings and harps, until you find that the expected sequences break down and it occurs to you that it is only imagination. I remember a nice old Dutch gentleman I once knew, aged about ninety at the time, who was immovably convinced that he would burn eternally in hell for his (probably non-existent) sins. After death he no doubt experienced in imagination all the distresses of judgement and condemnation; but it pleases me to think of it dawning on him in due course that there must be something wrong somewhere, when he found that the flames did not burn—at least, not enough to worry about.

This raises the rather nice point of the extent to which imagined happenings will have imaginary consequences. Presumably the

imaginary act of drinking an imaginary (but, so to put it, 'locally real') whisky and soda will call up by association the images of smell and taste; but will it produce an imaginary but locally real exhilaration, and will drinking a dozen of them produce an imaginary but locally real intoxication, followed by an imaginary, etc., hangover? Only, I should think, to a very limited extent. The recalled images will, it is true, or so we may suppose, be livelier and more vivid than those of mundane life; but in the absence of material substances to reinforce and maintain them by the continued influx of stimuli, I conceive that they will be so transient and evanescent—so easily displaced by alternative images—as to be scarcely worth considering. Thus, though the toper may pour innumerable imaginary whiskies down his imaginary throat, he will make little more progress towards satisfaction than the daughters of Danae perpetually filling their broken cistern.

88. *Corporeal versus Intellectual Interests.* I have deliberately written hitherto in terms of extreme and almost repellent trivialities, because it is only by considering concrete and apparently trivial examples of this kind that we can hope to reach plausible conclusions; and because it is above all things important to exclude from our minds all those sanctimonious sentimentalities which are apt so perniciously to corrupt thought on the subject. There is no reason whatever to suppose that the fact of a man's body ceasing to function should suddenly and magically invest him with knowledge or wisdom or virtue which he did not possess before, or that he is suddenly snatched into a state of beatitude or the opposite.

So far as we have gone, it is simply and solely a matter of trying to estimate in a reasonable way how the mind is likely to work when all sensory stimuli are cut off and the system of 'checks and balances' normally supplied by the external world ceases to operate.

But from the apparently trivial examples considered a point of considerable interest emerges. It looks very much as if the attempt—or rather the natural tendency—to pursue in imagination after death the material avocations and activities of mundane life is unlikely to be accompanied by any great degree of satisfaction, though it may take some people a long time¹ fully to realize it. I think, however, that this will apply only to what I have said, namely, *material* activities—or mainly so. But as regards intellectual activities, involving what we call abstractions, the matter seems to me to stand differently. An 'astral'² tot of rum will be found not to have the same properties as a mundane tot; but an astral circle must have

¹ I use the word 'time' somewhat metaphorically here; it will not be astronomical time, but something like 'amount of experience'.

² I shall allow myself the use, without prejudice, of the word 'astral', borrowed from the occultists, to refer to the next (post-mortem) phase of life whenever convenient. It has the advantage of avoiding the implication of 'imaginary' that, because something is made of images, so to say, it is therefore 'unreal'.

exactly the same properties as a mundane circle, because they are assured by definition, while two and two will always make four whatever sort of a world you live in, for the same reason. So if your chief interest in life is geometrizing or doing mental arithmetic there seems no reason why you should not indulge it to your heart's content after death, just as you did before.¹ It may be objected here that it is virtually impossible to conduct abstract thinking without the use of words, and that it is in fact done largely by subliminal² innervations of speech mechanisms; but it seems not unreasonable to suppose that memory images of the words and concomitant bodily sensations may be sufficient for this purpose.

I cannot quite make out how the matter would stand as regards aesthetic appreciation, except for the kind we feel towards an 'elegant' mathematical method, or a 'beautiful' piece of logical reasoning. The trouble would seem to be the difficulty of obtaining, except, of course, from memory, the material, so to speak, to appreciate aesthetically. It is no good transporting yourself in thought to the National Gallery if you have no physical eyes with which to see the pictures; and I see no reason at present (or very little) for supposing that you could pick up in any useful way the thoughts or visual images of those physically present; besides, on the whole I think I would rather not.

I will not pursue this line of thought further, but there is certainly a very strong suggestion that those who have cultivated 'the things of the mind', as the phrase goes, will find much greater possibilities of satisfaction than those who have not. This conclusion will, I fear, please the moralists (so-called) more than I usually care to do; but I do not think it is to be taken as implying that we should neglect mundane life in exclusive concentration on an ascetic intellectualism. After all, the physical world is just as much a part (I would even say just as respectable a part) of the total world as is the psychical, and experience of its properties, it seems to me, is just as necessary a part of one's mental equipment as anything else. It is, indeed, as I have just indicated, solely by such experience of these properties, carried forward in memory, that we can hope to orient ourselves in post-mortem existence at all.

But this is taking me well beyond my terms of reference, and there are many points yet to be discussed on which it seems possible to form not unreasonable opinions.

89. *The Problem of Recognition, Reunion, etc.* First and foremost, perhaps, is the vexed and somewhat poignant question of the extent to which we may expect to recognize, and be recognized by, the friends who have predeceased us, and of whether we may reasonably

¹ We need not, I think, go into details about whether the inability to make material notes, etc., is or is not compensated by vividness of imagery and absence of distraction.

² 'Subliminal' = of too low an intensity to result in overt muscular movement, etc.

expect to 'meet them again' in any satisfying sort of sense. Everything that I have said in the last three sections is clearly of great relevance to this issue, though it is not one on which I should care to be at all dogmatic, and the most plausible answer seems to me appreciably more cheering than we might fear even if not quite so good as (from our present viewpoint) we might hope.

Let us make no bones about it. We may say with perfect truth that we delight in the qualities of X's mind or the beauties of his moral character, and that these are more important to us than his physical body; but it is not, for most of us at least, the loss of these that chiefly affrights us when death threatens, or that we primarily miss when X is at last taken from us—it is the plain corporeal absence of X, whom we can no longer see or hear or touch, that is so distressing, and it is for renewal of the sights and sounds and touches that we chiefly long and hope. As Dr. Jacks (26) well points out, many a man would have some difficulty in even identifying his wife "if he had nothing but her moral characteristics to go by, however admirable these might be".

Now we evidently cannot expect a full-blooded physical reunion, such as we enjoy in this life after a return from a journey, while to my earth-bound mind at least a purely mental congruence seems most desperately chilly. But it seems to me probable that, even if we keep wish-thinking at a minimum, there will be some tempering of the wind to the shorn lambs.

Everything that I have said above about the 'local reality', so to term it, of imagined drinks and aeroplanes will clearly hold equally well for our thoughts of X. If, when I die, I desire the presence of X, I shall presumably think of X, which means calling up various images (visual, auditory, tactile, etc.) of X as I remember him.¹ And since there will be no competing sense of physical origin, as already pointed out, these images may be as vivid as the sensations of mundane life; thus, for the moment, my re-meeting of X will appear what we should usually call 'real' to me. But the other considerations will also apply, so that, if there were no more to be said, I should be doomed to an almost literal disillusionment, as I gradually discovered that this 'image-X' did not react to and on myself in the same way that mundane X had done—i.e., did not possess the physical properties of mundane X.

But there is this very important difference to be noted: that X has a mind, which by hypothesis is surviving as well as my own, whereas the drinks and aeroplanes, etc., of our previous discussion have not. My thoughts of X and his of me, with their images of situations and experiences shared, etc., are clearly competent to serve

¹ This is rather an agreeable thought; it seems to imply that we shall at least *appear* to meet again those we cared for in the form in which it most pleases us to think of them.

as K's promoting telepathic interaction and linking our psychon systems together. Indeed, if we have enjoyed any considerable period of life together, with many experiences common to us both, but peculiar to the two of us, this will presumably have already taken place to some extent.

Just how far this will affect the particular issue we are considering, I should not care to say. It may be that X's ideas of himself and his relations with me might react on mine of him, and vice versa; or it even might be that Mr. Tyrrell's theory of Apparitions (72) might prove relevant, and that our interacting minds might conspire together, as it were, to construct image-situations, so to call them, far more consistent and satisfactory than either of us could achieve singly. We do not as yet know enough to form even a reasonably plausible conjecture.

My own guess would be that these image-situations would be rather in the nature of a stop-gap or stepping-stone, affording some degree of comfort and satisfaction pending our learning to dispense with them. Thus those who despite their disclaimers were in fact only, or almost only, interested in their X's bodies and the physical gratifications to be derived therefrom, would find themselves no more than tantalized by an ever-elusive wraith. Those, on the other hand who, while properly delighting in the intrinsic merits of the flesh, had yet wisely used them as a means to the end of a true community of mind and spirit, would correspondingly soon adjust themselves to the changed conditions, to their infinitely greater long-term satisfaction.

90. *Contact with the Physical World: Psychical Environment.* To what extent, again, may we expect to maintain contact with mundane happenings and knowledge of them? My own surmise would be 'very slight'. To speak of deceased persons 'seeing' or 'hearing' physical events appears to me to be arrant nonsense. Seeing depends on physical light rays falling on a physical retina, and if you have no physical retina you can't see—and there's an end of it. But it seems to me very possible that, if you have a sufficiency of K-ideas in common with some one still living you might to some extent—how great I do not know—pick up and share their visual images or some of them (and of course other sensations), and thus maintain some sort of a vicarious contact. But I should expect it to be extremely hazy and imperfect.

Much more important, I think, though very difficult to deal with, is the question of what, if anything, takes the place of the external world of mundane life and acts as an 'environment'. It is fairly easy to give a superficially plausible answer to this by suggesting that the thoughts of other minds, i.e., psychon systems other than one's own, may play this part; but I am not sure that this is more than verbally satisfactory, though I think it may be. We may readily

concede that, in the absence of competition from sensory stimuli, images, and ideas derived telepathically from other minds are likely to be much more important than they are at present. But if, at some moment or other (and what in the context do we mean by this?) an idea K is present to my mind and to that of X (incarnate or discarnate) and an idea A, associated with it in X's mind, is thereby brought into my field of consciousness, how do I know that it was his and not my own—what gives it its 'environmental' quality? There is nothing whatever that I know of in the experimental work to indicate that 'telepathed' ideas have any distinguishing feature or attribute at all. It seems to me doubtful whether mere failure to recognize an image as one which I have imaged before would be sufficient for the purpose; for I find it fairly easy to conjure up images of which this is true—e.g., a black cat with a head at each end—without being sensible of any such alien quality. This, however, may very well be due to inadequate introspection or insufficient analysis, and on the whole I think that the notion of an environment consisting of the contents of other minds is probably the most promising that can be adopted.

91. *Stability of Psychon Systems.* I think it is now time to say a few words about the question of the stability of psychon systems, of which I emphasized the importance a few pages earlier. Possibly 'coherence' would be a better term, but we may let that pass for the moment.

To put the point in a very elementary way, what I have in mind is this. Granted that the psychon system immediately after death is substantially identical with what it was a moment before it, is there any guarantee that it will continue to stick together, so to say; and is there not a chance that it may disintegrate or come to pieces when the influx of sensory stimuli ceases?

At one time I thought there was, and that this was a much more serious risk, as it were, than that of extinction at the moment of death itself. Now I am not at all so sure, but the matter is of such manifest importance that I think it worth while to spend a few minutes trying to clarify it.

It is very easy to picture to oneself a psychon-system consisting of groups and sub-groups and sub-sub-groups, etc., of psychons linked together by associative bonds like atoms in a molecule—one can almost *see* the psychons and the links and the clusters of various sizes; and one can very easily visualize a group becoming detached and, perhaps, setting up shop on its own. But it is precisely this ease of picturing that makes such forms of words so dangerous. The moment we begin making quasi-mechanical models of things which are not even 'quasi-' mechanical, we are asking for trouble, for we run the risk of unthinkingly using for purposes of reasoning properties of the constituents of the model which we did not use

for building it. To take a crude example: We might try to convey to a child the notion of gravitational 'force' as it appears in astronomy by saying that the earth pulls the moon 'as if it were tied to it by a piece of elastic'. "Oh, I see," says the child, "then the farther the moon is from the earth, the harder it is pulled"; which, of course, is the exact opposite of the truth. The precocious infant has seized on a property of elastic which we did not need for our 'model' and discreetly ignored, and has argued correctly from it to a false conclusion. Similarly, if we argue to any conclusion from any property of a supposed 'link' or 'associative force' other than the fact which these terms are used to symbolize, we are liable to go astray.

To say 'A is associated with B in mind M' is *only* a shorthand way of saying that if A is presented to mind M, B is more likely to accompany or quickly follow it, or, vice versa, than if A were not associated with B; and even this needs considerable expansion before we reach a fully accurate statement. And to say that there is 'an associative link between A and B' is only to say the same thing in a different shorthand form. If we unthinkingly smuggle in any property of links as known in other contexts, e.g., liability to being 'broken', we are liable to come to false conclusions.

This question of the breakability of links seems to me to be of very great importance. If the links were of a kind that could literally be broken, then evidently sub-systems or groups of psychons could become literally detached from the main mass, and there would be no reason in principle why the process should not be continued to the point of complete disintegration of the whole system. If this were true, then everything I have said above about the conditions of post-mortem existence might be correct for the period immediately following death; but it might be that the mind or personality gradually faded away or dissolved like a lump of sugar in warm water. But I think that any such conception of links would be much too material and quite illegitimate; and that all the indications are against it.

It is a matter of common experience that suitable combinations of circumstances may cause us to recall quite vividly images of long past experiences (or early childhood and the like) which we should have said we had completely forgotten; and I believe I am right in saying that the results of deliberately suggesting such recall to hypnotized subjects indicate that any early experience could in principle be recovered under appropriate conditions. Moreover, the work of the psycho-analytic school seems to show pretty clearly that even though early experiences may not be recoverable in the sense of the relevant images entering the field of consciousness under normal conditions, they are none the less still operative, and therefore still 'linked' in some fashion to the rest of the mind.

I accordingly provisionally conclude that a 'link' once formed can never be broken; and I think this could be justified on theoretical

grounds, by translating into terms of probabilities, though it would be out of place to attempt it here. But the actual conditions of equilibrium of a psychon system will be a matter for mathematical treatment which we are at present far from being in a position to apply.

But this view introduces fresh difficulties of its own, and I must warn the reader that I am now going right out of my own depth into regions of almost complete speculation, though I think the possibilities opened up are much too interesting to be wholly ignored.

92. *Formation of Larger Systems.* Let us go right back to the beginning of the telepathy story or rather to the beginning of the association theory. In colloquial language: if an idea A is associated with idea K in my mind, and idea K is presented to your mind, then idea A is more likely to come into your mind than it would be if it had not been associated with K in mine. This is telepathy. There are, of course, many ideas of a 'public' character—such as sun, clouds, houses, trees, etc.—which at any moment are presented to large numbers of people simultaneously, and these have many ideas associated with them, which doubtless tend to come into all the minds concerned. But most of these will be themselves public, and, so to say, already in the minds concerned, while those that are not will have to compete, as regards any particular person's mind, with the other 'thoughts' of that mind, prompted by other factors in the person's environment, and with each other, so that nothing very noticeable happens. It is only in very special circumstances, such as those of experiments, that we can, as it were, identify an idea and ascribe its appearance to telepathy. We accordingly need not worry about this sort of generalized telepathy which is doubtless always going on, because it is, as we might say, too diffuse and too random to lead to overt results.

None the less, we must suppose that whenever two or more persons entertain the same or similar ideas (K's) at any time, then such other ideas as may be associated with these in the mind of each will tend to appear in the minds of the others. The operation of this tendency will be impeded in proportion to the number, intensity, etc., of the incoming sensa originated by the external world, and their associates, and it will naturally be facilitated as the competition of the incoming sensa and their associates is reduced.

Now, under post-mortem conditions we can at least be certain that there will be no competition from incoming sensa, because there will be no sense organs, nerve fibres, brain cells, etc., such as are necessary for the generation of sensa or the bringing of them (if they pre-exist) into the appropriate relation with the self nucleus, etc.

It seems not unreasonable to suppose, therefore, that what may roughly be termed 'telepathic intercourse' is likely to be much more

extensive and potent a factor under post-mortem than under mundane conditions. But, as we have seen, telepathy is essentially a matter of sharing rather than of transference; if, in everyday language, X 'telepaths' the idea O to Y, he does not lose it—it merely becomes more closely linked with the other constituents of Y's mind than it was (if at all) before. Indeed, this is true of non-telepathic communication though hardly in so pure a form. As I have pointed out elsewhere (7, cf. also 8) "there is a sense in which we can and habitually do mingle our personalities. Whenever we so laboriously communicate with each other through the roundabout methods of speech and writing, I add some of your experience to my own stock, or vice versa, yet you do not feel less you, or I less I, as a result. On the contrary, the consciousness of each may well be enriched and enlarged, not weakened or circumscribed, by the intercourse, and the effect would be enhanced if a less cumbersome mode of exchange could be employed. If . . . you and I could be put in complete telepathic *rappor*t, it would seem that you might absorb the whole of my experience, and I the whole of yours without the sense of individuality being at all diminished."

I should say, now, that this demands considerable qualification, but I think the main idea is sound enough. If I were to acquire telepathically quasi-memories of your childhood and parentage, etc., as vivid as those of my own, I might, to be sure, begin to have doubts about my own identity in the purely Home Office sense; but this is hardly the kind of 'I-ness' that I have in mind or is important. If my view of Consciousness be anything like correct, the consciousness of a system can hardly be diminished (but, I should have said, the reverse) by linking more psychons into it, while the words "enriched and enlarged" follow almost as a matter of definition.

The point I want to make, stated in the most general terms, is this: Just as the dissociative forces or their equivalent operative within the so-called individual mind (cf. sections 72, 77, and 79 above) may lead to the formation of repressed complexes, sub-personalities, etc., so the associative forces between minds—i.e., telepathic linkings of their constituents—is likely to lead to the formation of large syntheses or 'super-minds'. Admitting that all this is in the highest degree speculative and conjectural, in the sense that observational confirmation seems quite out of reach at present, I none the less think that it is along some such lines as these that our post-mortem development is most likely to proceed.

One or two points may be noted here. First, in accordance with the considerations of section 49, the synthesizing telepathy will predominantly take place between minds or parts or sub-groups thereof (this is likely to be important), of like constitution. Thus, the music-loving elements of Jones's personality would naturally become linked into one system, his motoring enthusiasms into a

second, and his beer-drinking propensities into a third, and so forth, though I do not see that this should involve any diminution in the consciousness of Jones, though a strengthening, so to say, of the systems concerned. Second, there seems nothing in principle to prevent such higher-synthesis systems acquiring a certain autonomy of their own, in accordance with the principle of section 71; but, in view of the almost complete lack of data from which to reason, I think it wiser not to attempt to pursue this sort of possibility any further here. On the other hand, I think it would be well worth any one's while to attempt a little constructive thinking on these lines, to which I shall have occasion to refer again below.

93. *Reincarnation: Genius and Inspiration.* I mention the subject of Reincarnation solely because it enjoys a considerable popularity in certain circles. I do not agree with the eminent philosopher who declared it to be the only view of Immortality worthy the consideration of an intelligent man; and, even if I did, this would not dispose of the two great handicaps under which it labours—namely, first that there is not a shred of worth-while evidence in its favour, second that not even its most ardent exponents can give any reasonable account of what it is that is reincarnated.

The supposed reminiscences of *soi-disant* ex-priestesses (of whom there seems to be a most astonishing number) are not verifiable, and would not be evidence of anything but a particular sort of dramatized paranormal cognition even if they were; I have yet to meet anything of the kind that could not have been constructed by any normally competent novelist.

When we ask what it is that reincarnates, we are told that it is the Ego; but unfortunately, further inquiry reveals that the Ego is supposed to be that which remains when all qualities of the personality have been stripped away in the process of advancement through successive 'planes'. That is to say, it is the exact analogue of the *Ding an sich*—a featureless entity expressly divested of all identifying attributes. It is accordingly meaningless to say that Smith's Ego rather than Brown's or Jones's Ego is reincarnated in the body of Robinson.

None the less, I think it possible that in a certain not uninteresting sense, the occultists may be on the track of a process that does actually occur.

To simplify matters, imagine that Smith devoted many years of his life to the study of some subject so extremely obscure that no one else had ever studied it—let us say the incidence of caries in the Plantagenet kings; then Smith's psychon system will contain a highly organized sub-system centred round the closely linked key-ideas of 'caries' and 'Plantagenets'. In due course Smith is gathered to his fathers; but half a century later, say, Robinson selects the same peculiar subject for a doctoral thesis, and he also begins to gather

a system of ideas around the same key notion of 'carius Plantagenet'. But this is just the condition we require for telepathic interaction between Smith's (surviving) and Robinson's psychon systems, with 'carius Plantagenet' acting as a K.

I do not mean to suggest for a moment that the whole content of Smith's mind instantly becomes accessible to Robinson, so that he can read off, so to say, the specific results of Robinson's researches; for this would be as contrary to common sense as it is to experience. But it does seem to me perfectly reasonable to suppose (within the framework of our suppositions) that the relevant system of Smith's mind might exert a certain influence on Robinson's.

After all, the essence of those lucky guesses which we describe as flashes of genius, intuition, or inspiration is the sudden emergence into the field of consciousness of an idea—from nowhere, as it seems—that fits the facts and does the job we want it to. And it has always seemed to me as if such ideas were, so to say, thrown up from the subconscious not so much because they are right as because they are not wrong—in accordance, as it were, with the operation of some Principle of Minimum Conflict. The difficulty usually is to find a theory, or a solution to a problem which will fit—i.e., not conflict with—not merely one set of facts, but several, which at first sight may appear contradictory. Various ideas hover on the margin of consciousness, but are automatically thrust back because they conflict with one set or another; and the satisfaction that is felt when at last the right idea appears results, I think, from the feeling of relaxation or relief from tension that accompanies the cessation of the conflicts.

In this kind of process the system of ideas formed by Smith, and telepathically linked, in the manner indicated, with that of Robinson, might reasonably be supposed to play a part, without our having to postulate any crude transference of thought from the deceased to the living.

In this somewhat Pickwickian sense, then, it seems possible to say without absurdity that Smith's surviving mind is in some degree animating Robinson's body—which is tantamount to 'reincarnation' of a sort.

I have, of course, taken an extreme and over-simplified case by way of illustration, but the interested reader may amuse himself by thinking out other possibilities.

It seems to me, too, that certain cognate phenomena, such as those of musical prodigies, may be susceptible of at least partial elucidation on much the same lines. If heredity and chance combine to produce a child equipped with the anatomical prerequisites of, e.g., extreme auditory discrimination and digital dexterity, we have a potential pianist or violinist, say, of outstanding ability; and if such a child has the fortune to make the appropriate musical contacts, he will automatically have presented to him the various ideas

more or less peculiar to these activities, but common to all who pursue them. These, I would suggest, may act as K-ideas and serve to link his mind with whatever pianistic or violinic, or merely 'musical', systems may have been formed—notably on the lines so roughly indicated in the last section.

More generally, I suspect that the inspiration of any artist—which always appears to come from 'outside' himself—may be due to no inexplicable magic but to the linking of his mind, however feebly and transiently, into the appropriate super-system built up, as it were, by all the masters and executants of his craft.

But this is bordering on the fantastic and taking us too far from the problem of Survival as such.

94. *The Problem of Survival: Summary and Conclusions.* The critical reader will have noticed that my later sections have contained much that borders all too closely on—to borrow a phrase from Rhine—"the familiar pattern of untested speculation". I have thought it worth while to make these suggestions, vague and imperfectly expressed as they may be, because of the interesting possibilities they seem to open up. But I should be very sorry if they were allowed to obscure or detract from the main points I have tried to make, which I think may be regarded with a very fair measure of confidence. Let us briefly run over these again to get them clear.

There can be no doubt at all about the reality of *sensa* and images (psychons), which are, on the contrary, the only realities we can possibly know. The phenomena of telepathy demonstrate that these entities do not conform to physical laws, for they pass (to speak colloquially) from one mind to another without any physical mediation; but they do conform to psychical law, notably the Law of Association, and associative linkages effectively operate, so to say, behind the physical scene. Associatively linked psychon systems accordingly provide us with a non-physical order of reality, while there is no justification, but the contrary, for supposing that they are extinguished by physical death, since we know that they operate, in telepathy, without reliance on physical processes. The phenomena of telepathy, etc., are therefore not an alternative to survival, but a virtual guarantee of it.

The real problem is that of what happens to the psychon system after death, or, in other words, what form survival takes. There is clearly an antecedent possibility, which I do not think we are yet in a position wholly to eliminate, though I regard it as unlikely in view of the evidence, that the surviving psychon system might gradually disintegrate. Personally, I think that a process of *integration* rather than of *disintegration* is more probable, and this without any loss of the sense of 'I-ness'; but I should not care to defend this very stoutly in the present state of our ignorance.

On the other hand, I think that what I have said about imagined

objects, situations, etc., being 'real' to the surviving mind, and the way in which this accounts for the apparently crassly material nature of some ostensible communications is almost indisputable; and I think the conclusion pretty well follows from this that the 'next world' will have, in the first instance, a definitely dream-like quality. That is not to say that it will be purely fantastic, in the colloquial sense, only that it will be ordered by psychical and not by physical laws, to which it will take us some little time to adjust ourselves, just as it does when we first make contact with this physical world.

Up to this point I feel almost complete confidence; but beyond it any conjectures one may venture must clearly be extremely tentative and liable to the most drastic revision.

I cannot say that I find the prospect particularly alluring; on the other hand, one would probably have felt much the same if, without mundane experience to go upon, one had had described to one the general principles governing this physical world one is so loath to leave; so very likely post-mortem existence will turn out to be a good deal more enjoyable, once we get used to it, than I have painted it.

In conclusion: Perhaps the greatest difficulty we have to contend with in this subject arises from within ourselves—from our natural desire to settle the issue definitely one way or the other, and at once; and our reluctance to resign ourselves to a state of partial and uncertain knowledge. It is this, I think, rather than the voice of reason, which makes so many of us prone to accept the roseate fairy-stories of spiritualists, occultists, religionists, etc., on the one hand, or even (since we demand an answer at whatever price) the pretentious extrapolations of materialists affirming extinction on the other. We insist imperatively that Survival, if it occur, shall be 'proved'; whereas I doubt whether this is possible in any ordinary sense of the word, because, I suspect, just those properties of the universe that make some sort of survival a certainty also provide alternative explanations (if we care to make them far-fetched enough) for any evidence of it.

But I think we can do better than prove Survival—we can find out something about it. If we harden our hearts against dogmatism in some quarters, sentimentalism in others, and wish-thinking in ourselves; if we carefully scrutinize the evidence (especially the odder and more unexpected items); if we try to develop a reasonable theory of what is likely to be going on, and check it wherever possible against any relevant facts obtainable, I believe we shall gradually form a pretty clear conception of what post-mortem conditions are like, and why. In this way, by studying the question of How, we shall make as it were a detour around Whether, and end with a degree of informed assurance unlikely to result from any frontal assault.

CHAPTER XII

THEOLOGY AND RELIGION

95. *Introductory: The Need for a New Outlook.* Any group of facts, or theory to account for them, which purports to throw light on the problem of Survival, is evidently encroaching to a considerable extent on the territory of theologians, who have professed to hold a monopoly of information on the subject from time immemorial. I believe myself that the relevance of the one subject to the other goes very much farther than this; and that when we have progressed a little further in the study of paranormal phenomena generally, particularly on the lines developed in this book, we shall find ourselves in a position to resolve, or more usually to dismiss, all the major problems of the theological field.

Discussion of the subject is, however, rendered extraordinarily difficult by the circumstance that any reasonably matter-of-fact and objective treatment is not only liable to be condemned as irreverent and iniquitous, but—which is worse—to hurt other people's feelings. None the less, some attempt should, I feel, be made; for there can be no doubt that the world's thought (at any rate that of the Western world) on the fundamentals of man's life and destiny has gone very seriously astray. This, I think, is pretty generally realized to the point of there being a genuine and widespread feeling of a need for guidance; but the Churches, which, if they are to justify their existence at all, should be our leaders in such matters, seem to have nothing to offer beyond a reiterated urging to return to the 'principles of Christianity' and to a livelier 'belief in God'.

The tragedy of it all, as I see it, is this. That with all their faults and irrationalities, which are many and grievous, the Churches do stand for principles of decency and kindness and altruism and fair dealing, and against the treacheries and cruelties and exploitations so conspicuous in the world to-day. But that they are so deeply committed to a set of technical propositions, bound to appear either incredible or offensive or irrelevant to any reasonable man, as to alienate rather than attract just those whose support they most desire.

Unless this state of affairs can be remedied, and a new line of approach adopted, the Churches, it seems to me, are doomed gradually to lose the last vestiges of their prestige and to sink to the level of the lesser eccentric sects, along with the Geoplanarians and Pyramidologists.

96. *History versus Myth: The True Contribution of Christianity.* It would only give unnecessary offence to particularize; but, as I see it, all questions regarding the factual accuracy of Biblical statements

—notably such ‘miraculous’ events as Virgin Birth, Resurrection, etc.—are wholly irrelevant to the true issues. Indeed, I should go so far as to say myself that the whole value of the Gospel story to mankind—and it is very great—lies *not* in its historical but in its legendary, mythical, or ‘typical’ character. It is not, I think, the Sermon on the Mount—or at least not this alone—that constitutes the peculiar contribution of Christianity to human thought, for very similar maxims are to be found elsewhere, and in any event could be deduced from first principles. It is to be found, rather, in the affirmation that all that is best and highest in man, as typified in the person of Jesus, is bound to arouse opposition, is often persecuted and apparently destroyed—yet is in fact indestructible and does perennially ‘rise again’ triumphant over seeming disaster. It is because this affirmation is (as I believe) profoundly true, and because mankind has dimly yet tenaciously perceived it to be true, and because the Christian conception of the ‘best in man’ (as in the Sermon) is more advanced than that associated with the usual hero myths (physical prowess, etc.) that true Christianity can claim to be a faith worth holding.

It is the undying resurgence of the Spirit of Man, not that of a particular body two thousand years ago, that should properly inspire our hearts and minds to-day.

97. *The Notion of a ‘Spirit of Man’.* I have introduced the phrase ‘the Spirit of Man’ at this point designedly, because I believe it to be a legitimate conception of great importance, which will enable us in due course to link up science, on the one hand, approaching through paranormal phenomena and telepathy theory, with religion, properly so-called and as distinct from particular creeds, on the other.

It will be remembered that I have already touched vaguely and tentatively on the possibility that what we usually call and think of as ‘individual’ minds may be telepathically (i.e., associatively) linked together into larger or ‘higher’ syntheses—much as the systems forming moods, sentiments, complexes, etc., are linked together to form any individual mind itself.

I was tentative in this matter on general precautionary grounds, but vague for the very simple reason that I do not yet know enough to be precise. Still, I think we can go a little further than we have and say that it seems as if such higher syntheses *must* be formed, if telepathy occur at all and the Association Theory thereof be correct.

I shall try, in the next division of this book, to deal with the kind of mechanism involved in somewhat greater detail; for the moment it will be sufficient to say only this, speaking somewhat colloquially for the sake of brevity: An idea in mind A tends to appear in mind B (i.e., telepathy occurs) if a third idea K, with which it is associated in A, is presented to B; but this, if true at all, is so regardless of the particular nature of K and of whether it is presented, etc., in the

course of a deliberate experiment. And there must be innumerable ideas capable of acting as K's, so that we must suppose that associational linking of one mind to another is incessantly going on in some degree, even if only on a chance-determined basis.

Most of this will simply overlap or duplicate ordinary associational processes¹ and may be disregarded; and most of the rest, I suppose, will be crowded out by the competition of contemporary physical stimuli. But there should be, I think, a small residual effect tending to make individual minds increasingly coalesce, as it were; and this should be effective in proportion as heredity and experience have tended to make any particular group of persons more 'like minded', in the sense of section 49, as between themselves than they are as compared with other groups.

I need not go into detail here, nor are we yet in a position to do so; but I think it should be clear that if telepathy and the consequent pooling of mental content is going on all the time, even if in small degree and in a random fashion, then—broadly speaking—all human minds (psychon systems) will be linked together into a single mind or system, simply by virtue of the common humanity of the contributing or constituent individual minds. And the same will presumably apply (probably more forcibly) to surviving minds, and there will be a linking of these with incarnate minds also. Thus, it seems to me, we are almost certainly on safe ground in thinking of something that may reasonably be called the Humanity Mind, or Mind or Spirit of Man.

This is *not* to say that there is 'only' One Big Mind, so to speak; for this would be mere foolish verbiage and contrary to experience. We know well enough that for nearly all practical purposes, and under all but exceptional circumstances, your mind and mine and those of Smith and Brown and Jones are almost completely separate; but that is no reason why they should not form 99 per cent autonomous parts of a larger federation, however keen on the maintenance of State rights they may be. Moreover, it seems to me very unlikely—little though I should care to be dogmatic—that the Spirit of Man is a self-conscious entity in the same definite and concrete way (I am rather feeling for words here) that yours and mine are.

It is impossible to be more than somewhat wildly conjectural here, but I am inclined to conceive of it as at present very diffuse and ill-integrated, filled, so to say, with innumerable jarring sects, and with the federal aspect only just beginning to assert itself. But it

¹ E.g., If you and I both see the moon, many associated ideas will tend to come to the mind of each of us; but the great majority of these will have been linked with 'moon' in each case by our ordinary independent but similar experience, so that there is no scope for telepathy as regards these. It would only be if one or other of us had formed some special and unusual association, more or less peculiar to himself, such as Moon-Glucpot, that anything telepathic might enter into the situation.

may, of course, have developed much further in the direction of harmonized integration than I imagine—there seems no means of telling; but in that case what I have to say below gains an *a fortiori* advantage.

On the other hand, I find it easy and helpful in my more speculative moments to entertain the idea that, in so far as there may reasonably be said to be any 'purpose' in human life, other than that of living it to the full in maximal awareness of what is going on, then it is likely to be the progressive harmonizing, integration, or 'self-realization' of this Spirit of Man or Mind of Humanity.

98. *The Spirit of Man as a Basis for a Rational Theology.* However vague we must necessarily remain about details, I have virtually no doubt that something in the nature of a Spirit of Man, on the lines just roughly sketched, must be an existent in the universe. I now propose to submit the view that this conception affords all that is needed to give a rational account of such religious beliefs and experiences as are neither self-contradictory nor plainly contrary to fact.

There have been, and are, so many religions and sects, and these have picked up so many accretions and assimilated so many myths and fantasies, that it is not at first sight easy to say just what is the central and characteristic feature of religion in general. But I think that when we have cut away all the rubbish there is very little doubt about it. At the bottom of all religion lies man's profound and innate conviction, or 'feeling' if a vaguer word be preferred, that he in some measure partakes of the life of something larger than himself—or something 'super-human', or at least (and better) 'super-individual'. And the most characteristic religious experience is that of sharing, or entering into, or becoming one with this super-individual Mind or Spirit or Consciousness. On this, I think, all those who have enjoyed such experiences in what is commonly accepted as their highest forms (mystical rapture, etc.) are substantially unanimous. I submit that what is entered into in such cases—the Greater Consciousness, etc., with which union is consummated, etc., is the super-individual group mind of humanity, or Spirit of Man, and that it is quite unnecessary to invoke any special Divine Mind or the like for the purpose. If an experience is reported as the achieving of union (by whatever means, which do not concern us here) with a mind or consciousness enormously more extended than one's own; and if we have reason to believe on other grounds that some such enlarged mind exists, then the natural thing to do is to conclude that this is what the reporter is talking about.

If we were to decide for any reason, apart from mere prejudice, that the Mind of Humanity would be insufficient to yield the effects observed, there would naturally be no objection to supposing that this system is itself linked in a still larger synthesis with whatever

other systems there may be—with those of animals, for example, or of 'inanimate' objects (if they somewhat surprisingly have any) or with those of the inhabitants of other planets, etc., if any.

There is nothing particularly original about this view as a whole. Plenty of writers have spoken of the Cosmic or Universal Consciousness, the Over-soul, the World Spirit, and so forth. The only novel features (but I believe them to be important) are the suggestion that the more definite conception of the Spirit of Man will do all that is required, and the ability to explain what the Higher Consciousness, or like entity, *is*, and the nature of the processes whereby it is brought into being. It is a higher order psychon system, or mind; and it is brought into being by associational processes operating between individual minds, or sub-systems of them, as in telepathy.

One somewhat technical qualification should, perhaps be introduced here. We are well aware, often only too acutely, that in the individual mind there exist fairly sharply contrasted and more or less mutually exclusive groups of tendencies, etc., which we broadly distinguish as 'good' and 'bad', or 'higher' and 'lower', or by some such antithesis. I see no reason to doubt that a similar distinction, and segregation of the goats from the sheep, prevails also in the larger synthesis of the Humanity Mind as a whole; and it is presumably with aggregates of the 'good' or 'higher' elements that the mystic achieves his union by whatever methods he adopts. Presumably, also, the successful Satanist, by inverting these methods, achieves an analogous relationship with the 'lower' or 'evil' aggregates.

99. *Definition of Deity.* I have never quite been able to decide *why* people want to believe in the kind of God provided by the Churches, except in so far as it must be very comforting to feel that there is Some One looking after one's interests, guarding one from harm, and prepared (if one asks in the proper way) to avert the consequences of one's follies. But all this seems to me no more than so much wish-thinking with a minimum of factual foundation; there is, I think, no statistical evidence to show that rain breaks a drought more frequently when prayed for than when not, or that the homes of the devout are less often hit by bombs than those of unbelievers.

I raise the point not because I want to give unnecessary offence, but because I think that much difficulty and trouble has been caused by theologians and religionists not stopping to think what they are trying to do before doing it. There are, in effect, certain things they want to say (many of them both true and important) about man's relation to the universe in which he lives. They want to give some sort of explanation of these truths; but instead of taking them one by one and dealing with each on its merits, they tend to lump them all together and present them as 'attributes' of a hypothetical Deity, with the most disastrous logical results.

They talk, for example, about the Fatherhood of God; though

even they do not suggest that the relationship of God to man is precisely that of King Edward VII to King George V. They use this alleged, but undefined, relationship to support the notion of the brotherhood of man. God is the Father of us all, they declare; therefore we are all brothers (or quasi-brothers—we need not cavil over details). But the argument should, of course, go exactly the other way, if at all. We are all quasi-brothers, in the sense that we are all human beings together marooned on this lump of rock in space; and it should be obvious to the meanest intelligence that the proper way to conduct our affairs is in a spirit of co-operative amity, or 'brotherhood', if you prefer the slightly sentimental term, rather than by exploiting each other and planning how best to cut each other's throat. If any one wants to drag in the notion of fatherhood, then clearly the analogue of 'Father' will be whatever it is that results in the relationship analogous to 'brother'. But this is our common humanity, and there is no need to invest a supposititious deity with the attribute of fatherhood. This brings us again very close to the notion of the Mind of Humanity or Spirit of Man as fulfilling the necessary functions, such as they are, of the 'God' of the Churches.

Again, the theologians insist that God is Good, and even allow themselves remarks about perfect or quintessential 'goodness'. Here they would do well to take a leaf from the book of the logicians who have dealt with the kind of definition likely to be needed in such a context.

Modern logicians make great use of a principle known as the Principle of Extensive Abstraction, first used (I think) by Frege in his definition of Number, but later worked out more generally and greatly developed by Whitehead, (76) which the interested reader must consult. I cannot explain it here, but, very roughly indeed, the outcome of it is that we may define an entity in any way we like, provided the entity so defined has the properties necessary to do the job we want it for. Thus the number 3 is defined as "the class of all triads", a 'thing' as "the whole class of appearances which would commonly be said to be appearances 'of' that thing", a point as "the class of all volumes in any series that would commonly be said to converge to that point". These definitions look unfamiliar and sound formidable; but it is found that they do their respective jobs.

I suggest that, *qua* 'goodness', the proper definition of 'God' is "the whole class of what would commonly be regarded as good thoughts", or, more briefly, "the whole class of good thoughts".¹

I think this is a definition with which theologians might very profitably experiment, though I must confess I do not quite see what they will get out of the notion of God so defined, in the sense

¹ Incidentally, the Devil will be defined as "The whole class of evil thoughts".

that one can 'get something' out of numbers, points, etc., defined in the same sort of way.

If it be objected that I ought to define 'good' (and will probably let myself in for an infinite regression by doing so), I have two answers. First, I think the point is sufficiently covered by the words "would commonly be regarded as". There is in practice precious little doubt about what is good—or, at any rate, about what is bad; no one is going to suggest that cruelty and treachery, or fear- and pain-promoting thoughts and actions are 'good', or to deny that kindness and altruism are so. Second, if pressed, I should say that those thoughts (and the actions to which they lead or tend to lead) are good which promote the long-term happiness of mankind. Happiness itself I should regard as very nearly an irreducible, in the sense that 'red' is—you cannot convey the quality of 'red' to a man who has been blind from birth. But I think I should *describe* happiness as being a state, not as some seem to imagine, of purely static contentment, any more than of feverish pleasuring, but as one of a kind of dynamic serenity—serenity because harmony and absence of conflict are of its very essence, dynamic because we live in a perpetual flux of change, to which we must perpetually adapt ourselves if harmony is to be preserved. The essence of satisfaction, I think, is the relaxation or easement of a tension or conflict, as the inability to ease a conflict is of dissatisfaction. I suspect that in the states we call happy there is a perpetually incipient tension perpetually relaxed as we perfectly react in harmony with our changing environment.

But this is a digression. The point I want to make is that here again, so soon as we begin to tackle a theological point, we find that conceptions derived from the notion of the Spirit of Man will do all that is required.

At this point some one is almost sure to object that I have been talking in terms of human values, whereas the only values that really matter are 'divine'—that if, e.g., a thing is not good 'in God's sight', it is simply not good, regardless of whether it makes for human happiness or not. Not only do I disagree, but I think that such a view almost amounts to nonsense by definition. It may of course very well be true, and indeed demonstrably is, that long-term happiness can only be ensured at the cost of some degree of short-term distress (except perhaps for the exceptionally enlightened), and that the individual often has to subordinate his immediate desires to interests of the common good, finding his satisfaction in his increased sense of union with the community. But if there were any Power that definitely desired and worked for the *unhappiness* of humanity, then it would, by definition, be the enemy of mankind.

There are many minor points it would be of greater or less interest to discuss—as, for example, of how the individual's mundane life

may be affected by his relation to the Humanity Mind, or of whether the theological doctrine of Damnation has any rational counterpart in the disintegration of psychon systems incapable of harmonious assimilation to it; but these would take us much too far afield.

100. *Concluding Remarks.* I feel very strongly that what the world chiefly needs to-day is not a new religion (there are too many already) or the revival of an old one (all are irrational in greater or less degree, or out of date, or both), but an intelligible view of man such as will lend rational force to the concept of the social responsibility of every individual and group towards every other—the conspicuous lack of which has led to the present disastrous state of affairs.

The Churches have failed because, although their ethic is for the most part sound enough, they have insisted on encumbering it with a mass of irrational, repellent, and irrelevant theology of a kind that is becoming increasingly unacceptable to modern minds. On the other hand, the so-called rationalists have fallen into the trap of going to the other extreme and denying the possibility of any reality other than the material; and this is true, I think, even of the scientific humanists, who, I suppose, represent the most advanced development of the rationalist faith.

But this view also is foredoomed to no more than a limited measure of success at best, because it ignores and fails to cater for man's deep-rooted conviction that there *is* some order of reality, namely, that which he calls 'spiritual', though I prefer 'psychical' myself, beyond or in addition to the material.

This belief, which is so deeply implanted and so widespread that it could almost be called instinctive, might none the less be no more than a particularly stubborn piece of wish-thinking, arising solely from his fear of death and natural desire for a more comfortable world. But the occurrence of paranormal phenomena generally, and of telepathy in particular, demonstrate beyond doubt that, as it happens, he is right in this; and that he is right also in feeling that rationalistic humanism, for all its perfectly sound insistence on humanity as the sole source of all values applicable to man, is none the less omitting something of vital importance to a complete philosophy of life.

I submit that, if we supplement the humanistic approach and ethic (which is substantially the Christian ethic) by the recognition of paranormal phenomena and their implications, and by the adequate development of appropriate theory more or less on the lines indicated above, we shall be able to produce an account of the universe which will not only give full scope to man's profound mystical yearnings, but also satisfy the most rigorous demands of reason. This will be very desirable, because man, despite the estimable Tertullian (*Credo quia impossibile*), is as insistently a rationalist as he is incurably a mystic.

CHAPTER XIII

GROUP MINDS AND SOCIAL SYSTEMS

101. *General.* If it be a fact that individual minds, or psychon systems, tend to become integrated, even partially and temporarily, into larger systems, this is likely to be of considerable importance to students of Social Psychology and to political theorists.

A good deal of work on the psychology of Groups has, of course, already been done, e.g., by Le Bon, (31) Trotter, (69), McDougall, (34) and many others; but I do not think any of them except McDougall, and he only very tentatively, has thought it worth suggesting that telepathy might operate as an important factor in the group situation. On the other hand, it seems to be pretty generally agreed that groups, especially crowds, often exhibit modes of behaviour which it is very difficult to account for on the view that the group is no more than an aggregate of geographically juxtaposed but psychically isolated individuals subjected to substantially common stimuli; in particular, they are prone to more extreme and violent types of action (panic, brutality, etc.) than the average of their members would be.

Any tendency to form a Group Mind, over and above the minds of the individuals forming the group, by telepathic interaction between them, might reasonably be expected to throw light on these points. From the point of view of practical politics, it may also be relevant, because, if the individuals of a group, society, or community tend naturally to organize themselves psychically in any particular way, simply by virtue of their being a group, then if we try artificially to organize them politically in a way which does not agree with this, we are likely to generate discords and conflicts which will make our society unstable and liable to disruption.

102. *Formation of Group Minds.* I do not profess, in the present state of the art, to be able to give a precise and detailed account of the process of psychical integration referred to above, which will presumably vary appreciably in different cases. But I think it is easy enough to see the general principles that must be involved, and to obtain a somewhat clearer view of the possibilities than we have so far done.

Speaking in the broadest and most general terms, we may argue as follows: If we can imagine two or more organisms identically similar as regards anatomical structure and the content and associative relations of their psychon systems, they would necessarily behave in an identically similar fashion in any given situation, because there would be nothing, by hypothesis, to make them behave differently. Conversely, if we can imagine two or more organisms each of which

is completely different from all the others (which is impossible, but that does not matter here) they would necessarily behave differently in any given situation, because there is nothing to make them behave in the same way.

In practice, organisms are partly similar and partly different, and their behaviour displays corresponding variations of similarity and resemblance. But it is clear that if you can alter any one of the components on which behaviour depends, in two or more organisms, in the direction of similarity, you will increase the probability of similar behaviour; in particular, for the present purpose, you will do so if you can increase the similarity of their mental contents—i.e., the number of similar and similarly organized psychons in their psychon systems (minds). But this is exactly what is done in principle, though on the smallest and most trivial scale, in experimental telepathy; for the experimenter X causes the idea of some object O to become associated or linked with the idea of the experiment E in the minds of the percipients, A, B, C . . . etc. More generally, the presentation of any idea K, with which some other idea Q, say, is associatively linked in some mind M, to a number of other minds will tend to 'implant', so to say, that idea Q in those minds, and so bring them a stage nearer the condition of 'one mind with but a single thought'.

Now consider the situation of a group of people watching a play or film or prize-fight, or listening to an orator. They are all, we may suppose, concentrating on what is going on, so that their fields of consciousness are mainly filled with substantially identical sensa and images. So far, there is nothing remarkable to note; these people will tend to behave in the same sort of way, of course—to weep with the heroine, cheer the winner of the fight, or applaud the orator—simply because they are more or less similar people (otherwise they would not be there together) acted on by the same stimuli. But the whole situation is evidently capable of acting as a kind of gigantic K, i.e., it is a big group of ideas presented simultaneously to all the minds concerned; and it follows from all we have said of the Association Theory of Telepathy, that if any idea Q happens to be, or to have been, strongly associated with this situation (or some other containing a high proportion of similar elements) in any other mind or minds, then this idea Q will tend to come into the minds of those now present.

Thus, if the orator links some such idea as 'Vengeance' with this K-acting situation, or some idiot screams 'Fire', these ideas, with their satellite associations attached, will tend to come to the minds of the audience much more forcibly than if they were presented to each member of the audience separately; because they will not only be verbally communicated, but 'telepathed' as well. Moreover, by hypothesis, the minds of the audience will be filled with what has

been going on, so that the various groups of ideas which would normally supply motives for criticism and form its basis may reasonably be supposed less accessible than would be the case in a non-group situation.

103. *Ideas and Crowds, continued.* I must confess that I am not altogether happy about the rigidity of this argument, though I think it is pretty near to what is likely to happen. We might, perhaps, reinforce it by considering the possibility of a kind of regenerative effect. Suppose that for any reason whatever, as by suggestion on the part of the orator or otherwise, one member of the audience happens to think of idea Q at any moment; then he is in the position of an experimenter associating Q with the total situation acting as a K, and Q will accordingly tend, other things being equal, to come into the minds of the other members of the audience. That is all very well, but we must suppose that these other people have ideas of their own also, so that they, at any moment, are associating a whole host of other ideas, R, S, T, . . . etc., with the same K. It is therefore a question of which will predominate, or whether they will all cancel each other out. I think there can be no doubt about this: Q will come up, in preference to R, S, T, etc., if in any of the minds concerned, it happens to be more closely associated with the K-acting situation antecedently, than they are.

Digressing slightly, we do not yet know whether two or more experimenters, using the same originals, are more effective, other things being equal, than is one, though I think I should expect them to be.¹ If so, then supposing that some first person, A, thinks of Q and thereby links it to the contemporary K-situation, and suppose that Q is pretty closely associated antecedently with this K in the mind of B, so that it is relatively near the surface, so to say; then B is likely to think of Q, and we shall have two quasi-experimenters instead of one. This by hypothesis will reinforce the effect, so that Q may just be caused to come up in the mind of some third person, C say, where it otherwise would not have done so; and so the process might continue regeneratively till the whole audience were entertaining the idea Q.

In any event, I think it is fairly clear that only ideas very commonly associated with the relevant K will be at all likely to emerge with sufficient force to become the basis for group behaviour, and this consideration provides a clue to understanding the observed tendency for crowds to behave in a more primitive and less civilized manner than the history, status, etc., of their individual members would lead us to expect. Civilized man is, for the most part, highly individualized, that is to say, the experiences of any two individuals have been considerably diverse, so that correspondingly differing groups of

¹ If I remember right, Warcollier (75) claims to have obtained improved results by using a plurality of experimenters (agents), but confirmation is lacking.

ideas are linked with any given idea in different minds. Thus, with the idea of Fire (conflagration) you and I and Jones may all have associated the idea of Escape, but you may also have the idea of Stirrup-pump, I of Minimax extinguisher, and Jones that of Bucket-of-earth. The idea of Escape is primitive and (I should think) very directly linked, whereas the others are certainly more sophisticated, and probably less closely linked. But in the imaginary situation of some one shouting an alarm in a theatre, etc., only the primitive idea of Escape will have any chance of becoming unanimously entertained by all of us, and certainly the only one (as a rule) on which all members of an audience can attempt to act, since stirrup-pumps, etc., are not available. Hence, if circumstances are such—and of course they vary very greatly in practice—the more primitive ideas, and the corresponding behaviours, are more likely to spread and be carried out than the more sophisticated.

104. *Group Minds: General Principles of Formation.* Now whether I be right or wrong in the suggestions I have just made, I think we can lay down one or two principles in this matter without very much risk of error.

First, ideas are likely to spread telepathically among any aggregate of persons, and psychical integration to occur in proportion as they are associated with any idea or group of ideas (or objects, of course) capable of acting as a K. Second, any aggregate of people (or, indeed, other organisms) will tend to become especially like-minded and to think and act with greater unanimity than they otherwise would in proportion as this kind of process is operative over and above the ordinary methods of communication by speech and writing, etc. Third, the effect will be increased or diminished in proportion as the ratio of these K-acting ideas or objects to others (non-K-acting) is high or low.

I think there can be no doubt about these propositions, which are indeed almost tautological.

I suggest we are now in a position to see, in broad outline at least, how the process is likely to work out in organisms of different types.

Let us note first of all that, if we had an aggregate of organisms truly identical in all respects, living identically similar lives, there would be perfect telepathic interaction, because there could be no possibility of any idea being associated with anything that was not a K. On the other hand, such a situation would be indistinguishable from one in which there was no telepathic interaction at all, because identical organisms in identical situations would be bound to think (I use the word in its broadest sense) and act identically on purely mechanical grounds. Conversely, as I have already said, if the members of such an aggregate were totally different in constitution and underwent totally different experiences, there could be no telepathic interaction at all.

It seems to follow, therefore, that there must be some condition between these two extremes at which the effect will be at a maximum; and that this will be when the members of the aggregate have a good deal in common, but display a moderate diversity in constitution or experience or both.¹ It is, of course, impossible to speak quantitatively.

Now, in Man, individuals differ very considerably in what I have called 'constitution', which includes heredity, etc., and enormously in their experience, even when they live in the same community and under much the same physical conditions. The reason for this is the development of speech and writing, of which the first is virtually and the second exclusively peculiar to man, for these enable him to enjoy vicariously and at second-hand a vast range of experience which he could never hope to meet with in his own person. Man is accordingly incomparably more highly differentiated in the respects that interest us here, and the individuals of the species incomparably more diverse, than any other animal.

We should therefore not expect telepathic interaction to be a strongly marked feature of human life under ordinary conditions—or at least theoretical considerations are wholly compatible with its not being so—because man is so diversified as to begin to approximate, we may suppose, to the second of the two extremes mentioned, namely, that in which the individual organisms of the aggregate are thought of as totally different. Men are not, of course, totally different from each other, otherwise one could not call them all 'men'; on the contrary, they resemble each other very strongly in many important respects, as do also the lives they lead. But it is perfectly reasonable to suppose that, for our present purposes, the differences of experience outweigh these resemblances except in special circumstances.

At the other end of the scale, or thereabouts, I conceive that the members of an oyster-bed are to all intents and purposes identically constituted and undergo substantially identical experiences which no pleasures of literature enable them to diversify vicariously. Under these conditions I imagine that there would be no telepathic interaction to speak of, though even an oyster presumably has a lowly psychon system of a sort.

Thus quite general considerations of a theoretical character lead us to the conclusion that we should expect to find the maximum of telepathic processes and consequent psychical integration just about where, to all appearances, we do find them, namely, among animals a good deal lower in the evolutionary scale than man, but appreciably above the lowest forms of life.

105. *Group Minds among Animals.* No one who has observed a

¹ Strictly, I think it is the experience that matters, because what we are interested in is the nature and linking of sensa and images; but the 'constitution' or make-up is indirectly important because it will modify these for each individual.

wheeling flock of starlings, or other birds of like habit, or even a shoal of minnows, can fail to have been struck by the extraordinary unanimity displayed. In the absence of any alternative we should of course be forced to suppose, as has usually been taken for granted, that this is due solely to the incidence of like stimuli on like organisms; but it is often a considerable strain to do so, in cases where no overt stimulus is perceptible, and the density of the flock, etc., is so great that it is hard to suppose that all members could have seen or otherwise sensed it if there were. To all ordinary observation, such aggregates certainly behave *as if* they were animated by a single mind; and, since we know of the occurrence of telepathy and the conditions here are evidently favourable—an aggregate of which the members have much in common, but a certain scope for independent individual experience—the natural thing to do is to conclude that they are.

I need not multiply examples of this kind—sheep, wolf-pack, etc.—but I should like to touch for a moment on the most highly developed cases we know, namely the social insects such as Ants, Bees and Termites. It is almost impossible, I think, to read the extensive literature of this subject, especially Eugene Marais's book *The Soul of the White Ant*, (35) without receiving an almost irresistible impression to the effect that it is the colony or aggregate that is the psychical unit, not the individual ant or bee, etc. Physical integration and the formation of a group mind seems here to have been carried to extraordinary lengths, so that the individual is reduced to little more than a specialized cell endowed with automobility. In the termites (white ants) the specialization of the individual for particular purposes has been carried very far. The Queen is nothing but a bloated ovary, into which food is inserted at one end while eggs come out at the other, while we find special warriors, gap-pluggers, pre-digesters, etc., just as in an animal's body we find cells specialized for reproduction, glycogen storage, blood aeration, and so forth.

It is as if Nature had decided to try the experiment of inverting the usual arrangement. Usually, the cells of an animal's body other than the blood corpuscles, are virtually immobile, and the body as a whole must move in order to find food or gain experience; in the hive or the ant-heap, the 'body' as a whole remains immobile, while the cells are, as it were, specially designed to be detachable so that they may be sent out on expeditions for foraging or reconnaissance, as well as performing their special duties. I have very little doubt that in such cases there really is a psychon system pertaining to the hive or colony as a whole formed by the psychical integration, through telepathy, of the sub-systems of the individuals, and that this is a far better developed entity in its own way than any of the individual systems that compose it.

Here again, it is worth noting, the condition we decided to be most favourable is fulfilled, namely that the members of the community have much in common combined with a certain moderate opportunity of diversified individual experience.

106. *Note on Instinct.* I think we may conveniently make a short digression here to touch on a point connected with Instinct, which seems of considerable intrinsic interest.

An enormous amount of nonsense has, of course, been written on this subject, as various authors have pointed out, and I have no desire to add to its bulk; but I am sometimes inclined to think that what has usually been quietly taken for granted without comment is scarcely less nonsensical than what has actually been said.

We are constantly called upon to admire, and on the whole very rightly so, the almost miraculous manner in which certain animals—such as the beavers, the weaver birds, even the ordinary garden spider, not to mention the ants and the bees—perform accurately, without tuition or previous experience, various highly complicated actions which are necessary to their well-being. But at the same time we are asked to believe that these actions are performed entirely automatically and solely by virtue of inherited patterns in the animal's brain and nervous system.

The argument runs thus: The spider, for example, is so constituted that under the influence of certain external stimuli and the accumulation (let us say) of certain secretions in its body, it is impelled at intervals to spin a web. It will do this, and do it perfectly, even if it has never seen a web, or had contact since it was hatched from the egg with any other spider; therefore the action cannot be in any way imitative or the like. Since there is no other way in which it can possibly obtain any kind of information about web-spinning, the actions *must* be, as it were, built into the creature's nervous system, etc., and their performance be a pure automatism.

Now, I suppose that, with an effort, I might possibly believe this, though it would be trying me very high, if every web-spinning task were exactly like every other. But it is not; on the contrary, no two such situations will ever be quite the same, and there may be very considerable differences between them. How then is a purely automatic mechanism to adapt itself to the variations? I do not say that this argument is coercive, though I think it adds considerably to the difficulties. But the whole contention seems to be extraordinarily weak, or perhaps I should say, strong only by default.

It is all very well to say that the performance *must* be due to the existence of an inherited pattern of nerve-paths in the brain; but I defy any one to do so much as to begin to sketch the kind of pattern that would be needed. And if when we ask the biologist why he believes this he can make no better reply than "Because there is nothing else it can be due to", I do not feel that the contention

gains force. It seems to me just the kind of unwarrantable extrapolation in which the materialists are so fond of indulging. The slobbering of dogs, they find, is explicable in terms of conditional reflexes; therefore, they argue, all activities, however intelligent, from web-spinning to the *Principia Mathematica*, must be explicable in the same terms. I do not see how we can categorically disprove such allegations, for they cannot be brought to the acid test of experiment; but I see no reason whatever for believing them if we can suggest any reasonably plausible alternative.

I suggest that instinctive behaviour of this high order or elaborate type may be due to the individual creature concerned (e.g., spider) being linked up into a larger system (or 'common subconscious,' if you prefer it) in which all the web-spinning experience of the species is stored up.

When I have occasion to tie up a parcel, I do not perform the requisite motions automatically, unless I have had long previous practice at tying parcels of very approximately that size and shape, as shop assistants have. On the other hand I equally do not approach each parcel-tying problem altogether *de novo*; to a certain extent I am helped and guided by my memories of previous struggles, even though they may not come specifically and vividly to mind. Somewhat similarly, I suggest, the industrious spider may be to some extent aided by the accumulated content of what I suppose we might reasonably call the Spider Mind; and *mutatis mutandis*, of course, in other cases.

107. *Group Minds and Nationalism.* To revert to Man: I have pointed out above that, owing to the high degree in which individual men are liable to be differentiated by their varying experience, both direct and vicarious, telepathic interaction and the consequent formation of group minds is likely to reach a maximum, under natural conditions, in animals considerably lower in the evolutionary scale than Man. This is not to say, however, that the kind of process we are considering may not play a considerable part in human affairs, or even be of very great importance, under the far from natural conditions in which mankind actually lives.

If we can take an aggregate of human beings, place them under conditions such that a certain group of ideas, K, is constantly presented to their minds, and then arrange for certain other ideas, Q, to be strongly associated with these K's in the minds of some section of the aggregate, we shall inevitably (assuming telepathy to be the kind of process I think it is) create a tendency for these ideas Q to come into the minds of the remaining members of the aggregate.

It is easy to see how this may lead to the formation of a kind of group (e.g., national) spirit even if the principle involved is not used deliberately. Ruritania, let us say, is a highly mountainous country, such that no Ruritanian can well think of anything without associating

it with mountains. This will make no difference as regards the ordinary casual thoughts of everyday life, because for any person at the receiving end, so to say, they will just be a welter of assorted ideas with none more insistent than the others. But if some section of the community begins thinking regularly—whether naturally or deliberately—about Ruritanian Superiority, say, or the like, then the corresponding ideas, constantly recurring in a non-random fashion in association with the K's, will tend to spread more freely than if there were no K's (mountains) and consequently no telepathic interaction.

I do not, of course, suggest that specific ideas of Ruritanian Superiority would come into the minds of those concerned in the same way that the specific idea of an object may come into the mind of a percipient in an experiment—the notion is a pretty vague one at best; but it must consist of a set of images of some sort, and I think there can be little doubt that the frequent, if unwitting, linking of these with the constantly presented K's is bound to have an effect, if only in predisposing those concerned to accept more specific ideas when directly presented.

The foregoing example is trivial, and it might not be impossible to pick holes in the argument. But I think there can be no doubt at all about what is going to happen if the K's are not natural but artificial, and the associations with what I have called the Q ideas are not made casually and unwittingly but deliberately and with every device of engorgement that perverted ingenuity can devise.

108. *The Group Mind of Nazi Germany.* Consider what has been going on in Germany for the last several years (including those before the present war). The German people has been forcibly and inescapably confronted with a set of K ideas in the form of the symbols, etc., of the Nazi party, notably the Swastika and portraits of Hitler, not to mention the 'Heil Hitler' salute, etc.

With these K-symbols, as I may call them, the Nazi propagandists have been at the utmost pains to associate as strongly as possible all those irrational and iniquitous ideas which constitute their doctrine. They have not done this, of course, in order to bring telepathic forces into play—at least I should think it extremely improbable that they know anything about the subject at all—but in order to avail themselves of the ordinary and well-known processes of normal association; so that whenever any one sees a Swastika, as every one is bound to do a thousand times a day, he will automatically be reminded of the greatness of Hitler, the glories of the Aryan race, and the enjoyability of knocking weaker people about. But I think that in their own perverted way they have builded better than they knew, and have set in motion below the surface forces which their crude and materialistic barbarism is quite incapable of comprehending.

Under-surface processes of this kind would, I think, be very much more dangerous, and very much more difficult to resist, than the pressure of 'straight' propaganda, formidable though this may be. Preposterous doctrines can be seen to be such, at any rate in moments of private detachment, and even the force of public opinion can be discounted; but the kind of thing I have been discussing is in the nature of an infiltration into the subconscious of which the victim may well remain wholly unaware, and which only minds of exceptional strength or enlightenment (or perhaps obduracy also) will be able to withstand. No man can be expected to guard against what he does not know can occur at all; and many a once right-minded German, I suspect, has been insidiously perverted in this kind of way to holding or at least tolerating ideas he would formerly have detested, without having undergone any recognized process of conviction, and without in the least understanding what has happened to him or why.

The matter is so relevant to the vital problem of the post-war treatment of Germany that I may be forgiven for devoting a few more lines to it.

It is waste of breath and worse to argue about whether all Germans are inherently wicked, or whether there are exceptions, and if so how many and how exceptional. This could only lead to the formation of two opposed schools of thought—the 'retributive' and the 'magnanimous' as we might call them; and if either of these had their way the last state of this world would probably be worse than the first. It is seldom prudent to enunciate propositions involving "All" or "None", and about the only things I should care to say about "all Germans" in ordinary times are, first, that they constitute a nation of immense strength and vigour and corresponding potentialities for good *or* evil; second, that they are, on the whole, appreciably more primitive and less civilized (in the proper sense of that term—I do not mean 'mechanized') than others who have lain more directly in the course of the main stream of European culture. This last renders them, I think, somewhat more susceptible than most peoples to the kind of process I have been discussing here, and somewhat more prone to admire brute force and violence; but these are not points of primary importance.

What *is* important at the present time is that of "all Germans" the vast majority are almost literally 'not themselves' and cannot 'call their souls their own'. I do not mean merely that they are dominated by the Gestapo—and no one lacking first-hand knowledge can properly understand what *that* means—but that, through the operation of the processes discussed above, their minds have been caught up and subsumed, in varying degrees, of course, but predominantly, in a hideous synthesis that constitutes the German Group Mind to-day and is almost unreservedly evil.

This synthesis will not be automatically dispelled merely by defeating Germany, though that is obviously the first prerequisite; it will not be dispelled by liquidating the Prussian Junkers and the military caste, though this is absolutely imperative; or even by emptying the arsenals and filling the larders, though the first is essential and the second desirable; least of all by meting out to Germany the kind of treatment she has delighted to inflict on others. And so long as it persists, the German menace will be no better than latent, every magnanimity will be taken as a sign of weakness, and Germans will set themselves to breed and build again for their next effort.

The measures referred to, essential though they may be, are no more than negative, or at best permissive, whereas a positive and constructive policy is needed; otherwise we may find ourselves, like the man in the Bible, involved with seven devils worse than the first.

I do not think that to supervise the re-education of Germany, in the ordinary more or less text-book sense, will be enough, though everything possible should be done on these lines also. In my submission we should take active steps to replace the psychical monstrosity that is the contemporary German Mind by a new and different synthesis as definitely orientated towards good as this towards evil. But we cannot bring about such a substitution merely by preaching at Germans, or even by setting them a good example, though it could only do good to try. The new synthesis must grow from within, not be imposed from without. This means that we should take active steps—and I believe no positive action could be more important or worth while—to focus German thought on the achievements in which they can take legitimate pride, instead of on performances of which, as sanity returns, they will presumably be miserably ashamed. I should like to see, after the war, a definite propaganda 'drive' on the largest scale—but not too crude—extolling the truly great contributions that German mathematicians and musicians, bacteriologists and poets, chemists and philosophers—have made to the enlightenment of mankind. When the names of Gauss and Beethoven, Koch and Schiller, Kirchoff and (even) Hegel strike a responsive chord in the German heart, as now the detestable Frederick, the unscrupulous Bismarck, the maniacal Hitler and the obscene Goering; when round these honoured names there has been built up a system of great and ennobling thoughts, as there has of base and degrading round those others; when Germans say "We are a Great People, how can we best serve?" instead of "We are the Chosen Herrenvolk, what shall we next grab?"—then the German menace will be dead. But not much before.

We must not merely knock the Germans flat, we must give them back their self-respect; but it must be based on the good they have

done, and can do, not on the evil they have done and are doing—on the light not the darkness they have spread.

This particular conclusion could doubtless be reached on other and more general grounds; but I think that the conception of a Group Mind formed in substantially the manner indicated (various historical and other factors contributing) is likely to prove an important help towards a proper understanding and just appreciation of the problem. In so far as the view suggested is correct, telepathy theory may accordingly be of high relevance to extremely urgent issues.

CONCLUDING REMARKS: PERSPECTIVE

We have travelled a long way from the careful recording of spontaneous cases, and the experiments with cards and drawings, with which this book began. On the way I have touched upon a considerable variety of facts, theories and speculations, but I should be very sorry to leave the reader with the impression that I regard all these as being of anything like equal validity. This is far from being the case, for some are about as near certain as anything in human life can be, others are almost certainly on the right lines though likely to need modification as knowledge increases, while others again are so highly conjectural as to be but little removed from fantasy.

As I said at the outset, it has not been my desire to lay down the law to the reader on doubtful matters, but rather to give him as fair an outline as I can of how matters stand and are trending at the present time, and I therefore think it will be well to conclude with an effort to put the principal items discussed into proper perspective, and to indicate the approximate degree of confidence with which some of them may be regarded.

I have no doubt that some of even the friendliest critics will contend that I would have done better to have played for safety by padding out the earlier sections of the book and bringing it to an end, somewhere in the latter or middle region of Part II, so as to include little more than an outline of the facts and of the basic explanatory theory. Certainly, by adopting some such policy, I could greatly have reduced the vulnerable area which I have in fact exposed; but I venture to think that the result would have been much less interesting, and would disproportionately have reduced whatever value the book may possess.

If we were to stop short at the conclusion that Telepathy is a fact in nature, and that it is explicable as a kind of special case of the well-known phenomenon of 'The Association of Ideas', operating through a Common Sub-conscious, this would be very interesting, no doubt, but would represent no more on the scale of ultimate importance, so to say, than the clearing up of any other small corner of the scientific field.

Unfortunately (or perhaps fortunately) for me, however, the facts of telepathy irresistibly force us outside the existing scientific field altogether,¹ just as the facts of electricity force us out of the field of push-and-pull mechanics; and they thereby inevitably open up a whole new world or order of existence of illimitable extent and transcendent importance.

¹ Outside the field of physical science, that is to say; strictly speaking, all knowledge is within the field of Science generally.

I am well aware that there is no better way of killing a good piece of work, or a good theory, than by claiming too much for it; but in this case it seems to be simply a matter of ineluctable fact that telepathy is either the clue to the understanding of the whole nature and texture of the non-physical world, or else it is nothing at all—no more than a minor psychological curiosity of little greater interest than a novel optical illusion. Just how successful I personally happen to have been in my attempts to follow up the clue, and just how often and how seriously I have gone astray, are matters of minor importance, provided I have succeeded in showing the *kind* of way in which the facts of Telepathy, and the theory which seems needed to explain them, are *relevant* to the matters discussed. No one trying to work on this subject in its present state has any business to expect to be right every time; in fact, if he is not prepared to be found wrong about four times out of five, he does not deserve to be right once; and if I were to find myself a year hence holding precisely the views I hold to-day, I should consider I had wasted the intervening period.

Moreover, I hope I need hardly say that, once I have dealt with the bare foundations of the subject, I am much more concerned to stimulate than to instruct. I am not very interested in whether any particular conclusions I have drawn are precisely correct, but I am very anxious to show that the facts and theory presented do open up a wide range of exciting possibilities, in which much work by many people is urgently desirable. We badly need, among other things, a great deal of deductive thinking, on the lines '*If the facts are as stated and the theory approximately correct, then, making such-and-such additional assumptions (if need be), such-and-such results should follow*'. If this is done, we can then turn to observation, or design fresh experiments, to ascertain whether these results do in fact occur; which is the invariable procedure of scientific method.

Turning now to the matter actually presented: I have no hesitation in saying that the reader may take the basic facts as being absolutely 'cast-iron'. Particular findings of a secondary character by particular experimenters, etc., may, of course, be upset by later work; but the cognisance or awareness of events or objects can occur, otherwise than by any sensory process or by rational inference, and in a degree not reasonably ascribable to chance, is no longer in doubt. This will be disputed only by those who either do not know the subject, or have decided in advance, as an axiom beyond dispute, that the physical world constitutes the whole of reality and that nothing else does or can exist.

The Association Theory of Telepathy, which is my own special contribution to the subject, is naturally harder to assess. This is not only on account of personal prejudice, which it is not too difficult to discount, but because (I think this is true) any set of facts can, in

principle, be explained by a plurality of alternative theories, out of which one must choose whichever does the work one asks of it with the greatest economy of hypothesis. Thus I doubt whether one would ever be entitled to say that a particular theory was *the* true one, unless one could show that no other possible theory could exhibit a greater economy.

In this case, however, I think I would go so far as to say, first, that at present there appears to be virtually no rival theory in the field at all, and certainly none which looks capable of explaining so much with the aid of so little; second, that I should be extremely surprised, to the point of incredulity, if the students of the future were to adopt a radically different *type* of theory—e.g., a quasi-radiative or, quasi-sensory type. I myself am very nearly as certain of this as I am of the reality of the basic facts; but I naturally cannot expect others to share my assurance to the full.

This is not to say, however, that I am confident that I have succeeded in getting the theory into its final *form*. I am about as sure as I can be of anything that Telepathy is essentially an associative process, in the sense that the phenomena of Telepathy and those of what we call 'Association of Ideas' are of the same basic character and result from the same properties of the same fundamental entities. But our knowledge of the laws of Association themselves is still vague and empirical; no one, I think, has yet stated them with precision, still less stated what properties of what entities must be assumed in order to exhibit the laws as logical consequences of these assumptions. Moreover, as I have said in the text, I think it not unlikely that we shall find ourselves obliged to introduce a 'force' or 'principle' of *dissociation* in order to explain certain facts, and this will naturally complicate matters. To exhibit both associative and dissociative effects (or even associative alone) as logical consequences of assumptions, we shall have to press our inquiry much farther than has yet been done, and it would be rash to forecast what revision of our conceptions may be called for in the process.

None the less, I think that the Association Theory, as here stated, is in a very strong position from which it will not at all easily be displaced. But perhaps the most important point of all in this connexion is that henceforward no one is entitled to cavil at Telepathy, as some have done in the past, on the ground that it is insusceptible of explanation.

The view of the Mind as a psychon system which I have propounded is so very similar to that held by Bertrand Russell as almost to lend the weight of his great authority to its main features, though I should be the first to admit that there are plenty of difficulties to be overcome before we get it fully worked out. Psychologists will not like it much, or my Relational view of Consciousness either, because it is hardly an exaggeration to say that, apart from the psycho-analytic

schools, psychologists have virtually banished Mind and Consciousness from their subject altogether, and will probably feel uneasy at the prospect of their reintroduction. They will also complain, as will others, that I have to all intents and purposes ignored the Brain altogether, and have said nothing about how it is connected and interacts with the Mind. But vitally important as the brain unquestionably is, it certainly has nothing to do with the immediate and characteristic mechanism of Telepathy as such—otherwise there would be nothing startling about Telepathy; and neither I nor any one else I have ever heard of has the faintest glimmering of what the connexion of the brain with the mind is, or of how they interact. That is perhaps one of the strongest reasons for the resistance of physio-psychologists to the notion of a truly psychical entity to be called the Mind.

I do not feel, however, that the correctness of my views of Mind and Consciousness, as stated, is at all vital to my main theme. Provided some psychical entity is conceded (and if not then you must deny Telepathy altogether) I don't very much mind what form it takes. If you insist on having something in the nature of a Pure Ego, or some sort of Self which is aware 'of' or cognizes *sensa* and images, or is related to them as container and content, I don't very much mind your using this sort of thing as a crutch till such time as you feel strong enough to walk without it. But I think you will find that all the work will in fact be done by the *sensa* and images (*psychons*) with the Self playing no more than a kind of decorative or figure-head part which can ultimately be cut out altogether—much as the Ether was reduced to 'the nominative of the verb to undulate'. On the whole, though, I quite expect to have to make appreciable alterations to my views of the mind before I am satisfied with it, and should be sorry to insist on every detail now.

By the reality of *sensa* and images, on the other hand, I am prepared to stand or fall, and for this I would fight to the death. But I think it is one of the very few points on which those best qualified to speak—notably logicians—would be almost unanimously in my support, so I think the reader may regard it as, humanly speaking, certainly correct.

If this be so, then I think the basic view I have submitted on the subject of Survival, namely that there must be survival of *some* sort but that its nature is doubtful, follows as a logical necessity. To get out of it you will have to offer logical justification for supposing that the only ultimate realities we know are annihilated by a change (death) in a physical object (body) of which the reality status is lower than their own and which we 'know' only as a construct from them. This seems to me preposterous; and if you say that they are not 'annihilated' but merely undergo some sort of re-arrangement, such that they can no longer be called a mind, then you are introducing

almost exactly the possibility that I have mentioned, namely disintegration; that is to say, you have shifted the question of Survival from Whether to How much. We are then very much in the position of being told "This is an atom; it has survived the break up of a molecule; how long is it going to last?" The answer depends on whether it is a stable type of atom or radio-active, and if so the latter whether it has a high or low liability to disintegration—that is to say it is a matter of degree.

But whereas I am about 95 per cent sure of my ground on this basic point, my assurance drops to, say, 20 per cent or 10 per cent or lower as regards most of the suggestions I have made regarding the nature of Survival. Naturally I myself consider these suggestions to be not inherently implausible, or I would not have made them; and on the whole they seem very reasonably consonant with such evidence as is available. But I would not care to claim more for them than this, and any deduction from fact and theory that the reader feels he can make (as opposed to a bare repetition of what the 'spirits' say) is just about as likely to be correct as my own.

As regards what I have said about Theology and Religion, it is hardly a matter for assessment of the kind I am attempting here. I myself have long felt the urgency of bridging the gap between the methods and findings of physical science and whatever elements may appear to be rational in the 'spiritual' beliefs and aspirations of Man; and I think that something on the lines I propose will come near to doing what is required. I shall, of course, be fiercely denounced by extremists of both sides but, when the blood-pressure returns to normal, I think that objective consideration will show the possibility of working out, on approximately these lines, a quasi-theology which will allow us to enjoy every legitimate satisfaction that a religion can offer without involving ourselves in the illogicalities that have hitherto beset them all.

As regards the Group Minds, etc., I feel that the position is rather similar to that obtaining in the matter of Survival; that is to say, the formation of *something* in the nature of a group mind under certain (probably quite common) conditions seems to me an almost necessary consequence of telepathy, on almost any theory, and especially so on mine. But, as the reader will probably have realized, I am far from clear in my own mind as to the kind of operative mechanisms that should be envisaged. I think the general notion may be regarded as of very high probability indeed, but the working out of the details is a matter in which a more intelligent application of deductive reasoning than I have so far been able to bring to bear would be especially valuable.

In conclusion: I should like to end this book on a note that I struck in one of my earliest paragraphs. Whatever else in what I

have said may be true or false, two things at least seem to me to be indisputable; first that Man's mechanical cleverness has so far outrun his wisdom that he is in a fair way to destroy his vaunted civilization and himself with it; second, that his only long-term hope—as opposed to stop-gap palliatives—lies in a better knowledge and understanding of his own nature, of his place in the Universe, and particularly of the fundamental relationships naturally subsisting between man and man and between group and group. On these questions physics throws no light, physiology but little, and psychology not yet enough.

But the modern discovery (the word is not illegitimate in the circumstances) of paranormal phenomena, notably the facts of Telepathy, has opened up a whole new world for our inquiry—a world which is manifestly as relevant to problems concerning the ultimate constitution of Man as was the discovery of electrical phenomena to the constitution of Matter. At present we can explore this new world only very gropingly, and at the cost of many stumbles and falls and goings astray; but that has always been the lot of pioneers, and it is better to fall at every step than never attempt to walk.

I do not for a moment suppose that we shall suddenly come upon a panacea for all our ills; that would be quite contrary to all antecedent experience, and the well-being of mankind can only be promoted, I am sure, by unremitting diligence in the extension and application of knowledge. But the present situation is so serious, and the prospects so gloomy, that we could ignore the possibilities offered us by this subject of widening and deepening our understanding only at our grave risk and peril.

REFERENCES

1. BOZZANO, E. *Phénomènes de Hantise*. (Alcan, Paris, 1929.)
2. BROAD, C. D. *Proc. S.P.R.* XLIII, Part 142, October 1935.
3. ——— *The Mind and Its Place in Nature*. (Kegan Paul, 1937.)
4. ——— and PRICE, H. H. *Symposia read to a Joint Session of the Aristotelian Society and the Mind Association*. (Harrison & Sons, 1937.)
5. BRUGMANS, H. J. F. W. *Compte-Rendu du Premier Congres International des Recherches Psychiques à Copenhague*, 1921.
6. ——— *Mededeelingen der Studievereenigen voor 'Psychical Research'*, 1923, No. 7.
7. CARINGTON, WHATELY. *The Death of Materialism*. (Allen & Unwin, 1932.)
8. ——— 'Three Essays on Consciousness'; *The London Forum*, February–April 1934.
9. ——— *Proc. S.P.R.* XLIII, Part 141, July 1935.
10. ——— *The Meaning of Survival*; Frederic W. H. Myers Memorial Lecture, 1935. (S.P.R.)
11. ——— *Proc. S.P.R.* XLVI, Part 162, June 1940.
12. ——— *Proc. S.P.R.* XLVI, Part 164, June 1941.
13. ——— *Proc. Am. S.P.R.* XXIV, January 1944.
14. ——— *Proc. S.P.R.* XLVII, Part 168, 1944.
15. COOVER, JOHN E. *Experiments in Psychical Research*. (Palo Alto, Stanford University Press, 1917.)
16. EDDINGTON, A. *The Nature of the Physical World*. (Cambridge University Press, 1930.)
17. ESTABROOKS, G. H. *Bulletin Boston S.P.R.* V, 1927.
18. FISHER, R. A. *Proc. S.P.R.* XXXIV, 1924.
19. ——— *Proc. S.P.R.* XXXVIII, 1928–29.
20. GREENWOOD, J. A. *Jour. Parapsychology*, II, 4, December 1938.
21. GURNEY, E., MYERS, F. W. H., and PODMORE, F. *Phantasms of the Living*. (Trubner, 1886.)
22. HERODOTUS; e.g., Penguin Edition, 1941.
23. HETTINGER, J. *The Ultra-Perceptive Faculty*. (Rider, 1938.)
24. ——— *Exploring the Ultra-Perceptive Faculty*. (Rider, 1941.)
25. HOFFMAN, B. *Jour. Parapsychology*, IV, 1, June 1940.
26. JACKS, L. P. *Proc.* XXIX, December 1917.
27. JAENSCH, E. *Eidetic Imagery*. (Kegan Paul, 1930.)
28. JAMES, WILLIAM. *Psychology*, Vol. ii, p. 449.
29. JENKINS, J. G., and DALLENBACH, K. M. *Amer. Jour. Psy.*, XXXV, pp. 605–12.
30. JEPHSON, I. *Proc. S.P.R.*, Part 109, 1928–29.
31. LE BON, GUSTAVE. *The Crowd*.
32. LODGE, O. *Raymond*. (Methuen, 1916.)
33. MACE, C. A. 'Supernormal Faculty and the Structure of the Mind'. Frederick W. H. Myers Memorial Lecture, 1937, *Proc. S.P.R.* XLIV, Part 151, November 1937.

34. MCDUGALL, W. *The Group Mind*. (Cambridge University Press.)
35. MARAIS, EUGENE. *The Soul of the White Ant*. (Methuen.)
36. MARSTON, W. M. *Jour. Ab. and Soc. Psy.*, July 1926.
37. ——— *Psyche*, July 1929.
38. MYERS, F. W. H. *Human Personality and its Survival of Bodily Death*. (Longmans, 1903.)
39. OGDEN, C. K., and RICHARDS, I. A. *The Meaning of Meaning*. (Kegan Paul, 1930.)
40. PEARSON, KARL. *The Chance of Death*. (Arnold, 1897.)
41. PRATT, J. G. *Bulletin Boston S.P.R.* XXIII, March 1936.
42. ——— and WOODRUFF, J. L. *Jour. Parapsy.*, III, 2, December 1939.
43. PRICE, H. H. *Perception*. (Methuen, 1932.)
44. ——— *Proc. S.P.R.* XLV, Part 160, December 1939.
45. ——— *Philosophy*, July 1940.
46. PRINCE, FRANKLIN. *Proc. Am. S.P.R.* XV, 1921.
47. RHINE, J. B. *Extra-Sensory Perception*. (Boston, S.P.R. 1934.)
48. ——— *Jour. Parapsy.*, V, 1, March 1941.
49. RHINE, J. B., PRATT, J. G., SMITH, B. M., STUART, C. E., and GREENWOOD, J. A. *E.S.P. after Sixty Years*. (New York, Holt, 1940.)
50. RUSSELL, BERTRAND. *Our Knowledge of the External World*. (Open Court, 1921.)
51. ——— *Mysticism and Logic*. (Longmans, 1918.)
52. ——— *The Analysis of Mind*. (Allen & Unwin, 1921.)
53. SALTER, W. H. *Ghosts and Apparitions*. (Bell, 1938.)
54. SALTMARSH, H. F. *Proc. S.P.R.* XLII, Part 134, February 1934.
55. ——— *Proc. S.P.R.* XLVI, Part 165, September 1941.
56. ——— and SOAL, S. G. *Proc. S.P.R.* XXXIX, Part 114, March 1930.
57. SINCLAIR, UPTON. *Mental Radio*. (Pasadena; Upton Sinclair, 1930)
58. SOAL, S. G. *Proc. S.P.R.* XL, Part 123, 1932-3.
59. ——— 'Preliminary Studies of a Vaudeville Telepathist'. *Bulletin III of University of London Council for Psychical Investigation*, 1937.
60. ——— *Proc. S.P.R.* XLVI, Part 162, June 1940.
61. ——— and GOLDNEY, K. M. *Proc. S.P.R.* XLVII, Part 167, December 1943.
62. SOCIETY FOR PSYCHICAL RESEARCH. 'Objects of the Society', *Proc. S.P.R.* I, 1882-83.
63. STEVENS, W. L. *Annals of Eugenics*, VIII, Part III, 1938.
64. THOULESS, R. H. *Proc. S.P.R.* XLIII, Part 139, April 1935.
65. ——— *Proc. S.P.R.* XLVII, Part 166, July 1942.
66. ——— *Brit. Jour. Psy. (G.S.)*, XXXIII, Part 1, July 1942.
67. TILNEY, F. *The Brain from Ape to Man*.
68. TROLAND, L. T. *A Technique for the Experimental Study of Telepathy and other Alleged Clairvoyant Processes*. (Albany; no date.)
69. TROTTER, K. *The Instincts of the Herd in Peace and War*.
70. TYRRELL, C. N. M. *Proc. S.P.R.* XLIV, Part 147, July 1936.
71. ——— *Jour. Parapsy.*, II, 2, June 1938.
72. ——— *Apparitions*; Frederick W. H. Myers Memorial Lecture, 1942. (S.P.R.)
73. ——— *Science and Psychical Phenomena*. (Methuen, 1938.)

74. USHER, F. L., and BURT, F. P. *Annales des Sciences Psychiques*, XX, 1910.
75. WARCOLLIER, R. *Experimental Telepathy*. (Boston, S.P.R., 1938.)
76. WHITEHEAD, A. N. *Principles of Natural Knowledge*. (Cambridge University Press, 1919.)
77. ——— *The Concept of Nature*. (Cambridge University Press, 1920.)

INDEX

- Aether, luminiferous, 50, 60
- Animals, mentality of, 111
- Ants, white, 158
- Apparitions, 24, 73, 105
- Apprehensions, scientific, 44
- Association, main law of, 55
 - sub-laws, 60 ff.
 - Theory of Telepathy, 54 ff.
 - objections to, 80 ff.
- Attraction, gravitational and other, 51
- Automatic speech, 116
 - writing, 115
- Autonomy, psychical, 104, 114 ff.

- Barrett, Sir William, 6
- Behaviourism, 107
- Bozzano, E., 77, 171
- Brain, 109, 110
 - waves, 51
- Broad, Professor C. D., 37, 40, 43, 53, 85, 93, 96, 171
- Brugmans, Professor, 14, 171
- Burt, F. P., 12, 171

- Camp, Professor, 22
- Cards, experiments with, 9 ff., 21 ff.
 - v. drawings, 10
- Catalogue of drawings, 35
 - scoring, 35
- Causality, 45
- Chance, 10
- Churches, position of, 145, 152
- Clairvoyance, viii, 91, 94
- Code difficulty, 52
- Coincidence, 4
- Conation, 104
- Consciousness, 99 ff.
- Controls, mediumistic, 120 ff.
- Coover, Dr. J. E., 12 ff., 171
- Croesus, King, 1
- Cross-correspondences, 125
- Cumulative evidence, 4

- Dallenbach, K. M., 112, 171
- Deity, 149
- Delphic Oracle, 1
- Demons, 117
- Devil, definition of, 150
- Displacement, phenomenon of, 31, 38
- Dissociative forces, 105
- Drawings, experiments with, 10, 27 ff.
- Duke University, xiv

- Eddington, Sir Arthur, 88, 90, 171
- Egg, experiment with, 83
- Ego, pure, 100, 141
- Eidetic imagery, 76
- Elliot, Mrs. Warren, 120

- Emotion, 78, 101 ff.
 - James-Lange theory of, 103
- Encinas, Professor, 76
- Estabrooks, Dr. L. H., 17, 171
- E.S.P. *See* Extra-Sensory Perception
- Experiment, earliest recorded, 1
- Extra-Sensory Perception, viii

- Faggot theory, 5
 - Feda, 120, 121
- Fisher, Professor R. A., 11, 12, 17, 27, 35, 171
- Fisher scores, 35
- Forgetting, 61, 112

- Gall-stone, elephant's, 72
- Garrett, Mrs., 120
- Genius, 141
- Germany, 161 ff.
- Ghosts, 75, 105
- God, definition of, 150
- Goldney, Mrs. K. M., 31, 39, 40
- Greenwood, J. A., 23, 171
- Groningen experiments, 14
- Group minds, 153 ff.
 - of animals, 157-8
- Gurney, Edmund, 2, 6, 75, 171

- Hades, Ghosts in, 105
- Hallucinations, 87, 132
- Happiness, xii, 151
- Harvard University, xiii, 14
- Haunting, 75
- Haunts, localization of, 76
- Heart-throbs, 51
- Herbert, C. V. C., 28
- Herodotus, 1, 171
- Hettinger, Dr. J., viii, 26, 72, 171
- Heymans, Professor, 14
- Heywood, Mrs., 40
- Hodgson fund, xiii
- Hoffman, B., 51, 171

- Ideas, use of term, 55
 - reality of, 81
 - apparent transmission of, 87
- Imagery, eidetic, 76, 131
- Images, 96 ff.
 - world of, 131
- Improbability of telepathy, alleged
 - intrinsic, 42
- Individuality, 118
- Inspiration, 141
- Instinct, 159

- Jacks, Dr. L. P., 135, 171
- Jaensch, Dr. E., 76, 171
- Jenkins, J. G., 112, 171
- Jephson, Miss, 17, 171

- K-ideas and objects, 57 ff.
 artificial, 70
- Law, domain of, 45
 of inverse squares, 51
- Learning and recall, 61
- Le Bon, Gustave, 153, 171
- Leonard, Mrs. Osborne, 120
- Leverhulme Research Fellowships, xiii
- Literary puzzles, 125
- Lodge, Sir Oliver, 6, 129, 171
- Mace, Dr. C. A., 40, 77, 171
- Marais, Eugene, 158, 172
- Marion (Josef Kraus), 38
- Marston, W. M., 96, 172
- Martin, Dorothy R., 40
- Matching method, 28, 29
- McDougall, Professor, 153, 172
- Mind, need for understanding of, x,
 xi
 nature of, 55, 56, 95 ff.
 and brain, 109
- Mongoose, unreal, 86
- Multiple personalities, 115
- Murphy, Dr. Gardner, 40
- Myers, F. W. H., ix, 2, 6, 75, 172
- Naaman, 60
- Nationalism, 161
- Nazis, 161 ff.
- Newton, 50, 63, 88
- Object-reading, 26, 72
- Ogden, C. K., 85, 172
- Originals, use of term, 11, 29
- Ouija board, 115
- Pagenstecher, 26
- Paranormal cognition, name, viii
- Parapsychology, use of term, 23
- Pearson, Karl, 10, 172
- Percepts, 56, 85
- Percipient, use of term, 8
- Perseveration, 129
- Perrott studentship, xiii
- Photograph experiments, 70
- Piper, Mrs., 116, 120
- Planchette, 115
- Podmore, Frank, 6
- Possession, demonic, 117
- Pratt-Woodruff experiments, 23, 172
- Precognition, 31, 91 ff.
- Price, Professor H. H., 1, 40, 49, 52, 93,
 172
- Prince, Dr. Franklin, 26, 172
- Psi, ix
- Psychometry, 26, 72
- Psychon, 96 ff.
- Psychon systems, 76, 77, 97, 113
 autonomy of, 104, 114 ff.
- Purposivity, 105
- Radio. *See* Wireless
- Rapport, 66 ff.
- Recognition, etc., post-mortem, 134
- Reincarnation, 141
- Relics, and object-reading, 73
- Repression, 105
- Rhine, Dr. J. B., ix, xiv, 20 ff., 31, 143,
 172
- Richards, I. A., 85, 172
- Richmond, Kenneth, 40, 125
- Richmond, Mrs. Z., 125
- Roulette, 10
- Russell, Bertrand, 85, 90, 94, 96, 108,
 167, 172
- Salter, W. H., 72, 172
- Saltmarsh, H. F., 31, 125, 127, 172
- Self, 100 ff.
- Sensa, 85, 96 ff.
- Sense data, 85
- Sequences of sensa, etc., 87, 90, 132
- Sidgwick, Professor and Mrs. Henry, 6
- Significance, use of term, 9
- Sinclair, Upton, 28, 172
- Sixth sense theories, 52
- Soal, S. G., 31, 37 ff., 172
- Society for Psychical Research, 1, 2,
 28
- Space, physical, 88
- Spirit of Man, 146 ff.
- Spontaneous cases, 2 ff.
- Stanford University, 13
- Stevens, W. L., 11, 27, 32, 172
- Stribic, Frances P., 40
- Subject, use of term, 8
- Survival of Death, 124 ff.
 meaning of, 126
- Synthetic processes, 139.
- Tanagras, P., 28
- Taves, Dr. Ernest, 40
- Telepathy, meaning of word, etc., vii
 importance of, x ff., 170
 scientists and, xii, xiii.
 Association Theory of, 54 ff.
- Theory, importance of, 47
- Theories in general, 48 ff.
- Thouless, Dr. R. H., x, 13, 20, 40, 60,
 110, 172
- Tilney, Dr., 111, 172
- Trinity College, Cambridge, xiii.
- Troland, L. T., 14, 172
- Trotter, K., 153, 172
- Tyrrell, G. N. M., 2, 24, 75, 78, 172
- Ultra-perceptive faculty, viii
- Usher, F. L., 12, 173
- Van Dam, 14
- Vaudeville telepathist, Soal's study of,
 38, 172

Verrall, Professor and Mrs., 6
Vibrations, 60, 72

Warcollier, R., 155, 173

Wiesner, Dr., ix

Will, 101 ff.

Wireless-type theories, 50

Woodruff, J. L., 23, 172

Word-association tests, 54, 121

Wynberg, Dr., ix

Zener cards, 20



